JRC Scientific and Technical Reports

Scientific, Technical and Economic Committee for Fisheries (STECF)

REVIEW OF SCIENTIFIC ADVICE FOR 2011 Part 2

Advice on Stocks of Interest to the European Community in the North Sea Celtic and Irish Seas, West of Scotland, West of Ireland, south western waters, Icelandic and East Greenland, Barents Sea and the Norwegian Sea, Faeroe plateau ecosystem, Black sea and widely distributed and migratory stocks, deep sea stocks and Elasmobranch Resources in the North East Atlantic.

PREPARED IN DRAFT BY THE STECF-SGRST-10-02, LYNGBY, DENMARK 5 – 9 JULY 2010.

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The Scientific, Technical and Economic Committee for Fisheries (STECF) has been established by the European Commission. The STECF is being consulted at regular intervals on matters pertaining to the conservation and management of living aquatic resources, including biological, economic, environmental, social and technical considerations.

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SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES (STECF)

REVIEW OF SCIENTIFIC ADVICE FOR 2011 – part 2

This report does not necessarily reflect the view of the European Commission and in no way anticipates the Commission's future policy in this area

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REVIEW OF SCIENTIFIC ADVICE FOR 2011 PART 2

General request to STECF

The STECF is requested to review and comment on the scientific advice released in 2009 – 2010 in particular for the stocks specified below. The text of previous STECF reviews of stocks for which no updated advice is available shall be retained in the report in order to facilitate easy reference and consultation.

STECF is requested, in particular, to highlight any inconsistencies between the assessment results and the advice delivered by scientific advisory committees of ICES and RFMOs.

In addition, when reviewing the scientific advice from ICES, and any associated management recommendations, STECF is requested to take into account Harvest Control Rules adopted in any type of multi-annual management plans and Harvest Control Rules suggested in the Communication from the Commission on fishing opportunities for 2011 (COM(2010)*241*-FINAL – see supporting documentation. STECF is therefore requested to advise on the TACs corresponding to the implementation of Annex III (pages 17-18) of COM(2010)*241*-FINAL. When interpreting such rules, references to reductions by one-quarter should be taken to mean reductions corresponding to reducing fishing mortalities by equal decrements over the four years from 2011 to 2014, F_{msy} being implemented in 2015.

In addition, for those stocks, excluding naturally short-lived species, where it will not be possible to provide advice based on a catch forecast in relation to precautionary limits, STECF is requested to advise on a TAC corresponding to the application of the following rule for category 6 to 9 stocks of the Commission communication on fishing opportunities for 2011 (COM(2010)*241*-FINAL):

1. Where there is evidence that a stock is overfished with respect to the fishing mortality that will deliver maximum sustainable yield (or is depleted to a low level compared with historic levels), a reduction in TAC as needed to reach F_{msy}, but no greater than 15% would apply.

2. Where there is evidence that a stock is under fished with respect to the fishing mortality that will deliver maximum sustainable yield, an increase as needed to reach F_{msy}, but no greater than 15%, would apply.

3. The considerations in paragraphs 1 and 2 override subsequent paragraphs.

4. Where abundance information either indicates no change in stock abundance, is not available or does not adequately reflect changes in stock abundance, an unchanged TAC would apply.

5. Where ICES considers that representative stock abundance information exists, the following rule applies:

a. If the average estimated abundance in the last two years exceeds the average estimated abundance in the three preceding years by 20% or more, a 15% increase in TAC applies.

b. If the average estimated abundance in the last two years is 20% or more lower than the average estimated abundance in the three preceding years, a 15% decrease in TAC applies.

Where TACs have not been restrictive, and a reduction is required according to paragraph 1 or paragraph 5.b, STECF shall advise on an appropriate level of TAC reduction necessary to achieve the intended reduction in catches. STECF shall decide on an appropriate F_{msy} proxy in each case.

Introduction to the STECF Review of Advice for 2011

Background

This report represents the STECF review of advice for stocks in the North Sea Celtic and Irish Seas, West of Scotland, West of Ireland, south western waters, Icelandic and East Greenland, Barents Sea and the Norwegian Sea, Faeroe plateau ecosystem, Black sea and widely distributed and migratory stocks, deep sea stocks and Elasmobranch Resources in the North East Atlantic and was endorsed by the STECF at its 32nd Plenary meeting held in Copenhagen from 12-16 July 20109. For some stocks listed in this report, the advice will be updated in October 2010 and published in the STECF Consolidated review of advice for 2011, which will be available in November 2010.

In undertaking the review, STECF has consulted the most recent reports on stock assessments and advice from ICES and has attempted to summarise them in a common format. The review was drafted by the STECF-SGRST 10-01 Working group during its meeting held in Lyngby, Denmark from 7-9 June 2010 and adopted by written procedure on 17 June 2010.

The STECF review of advice for 2011 Part 1 included the latest assessments and advice for stocks in the Baltic sea and was publishes in June 2010. Part 3 will contain imfoprmation of other stocks of interest to the European Community and will be published in November 2010. Parts 1 2 and 3 will also be amalgamated and published as the Consolidated STECF Review of advice for 2011 in November 2010.

Format of the STECF Review of advice

For each stock, a summary of the following information is provided:

STOCK: [Species name, scientific name], [management area]

FISHERIES: fleets prosecuting the stock, management body in charge, economic importance in relation to other fisheries, historical development of the fishery, potential of the stock in relation to reference points or historical catches, current catch (EU fleets' total), any other pertinent information.

SOURCE OF MANAGEMENT ADVICE: reference to the management advisory body.

MANAGEMENT AGREEMENT: where these exist.

REFERENCE POINTS: where these have been proposed.

STOCK STATUS: Reference points, current stock status in relation to these. STECF has included precautionary reference point wherever these are available. The stock status is summarised in a "traffic light" table utilising four separate symbols to indicate status in relation to different reference points. The key to the symbols is as follows:

- indicates an undesirable situation e.g. F is above the relevant reference point or SSB is below the relevant reference point

- indicates a desirable situation e.g. F is below the relevant reference point or SSB is above the relevant reference point

- indicates that the status is unknown e.g the reference point is undefined or unknown, or F or SSB is unknown relative to a defined reference point

- indicates that status lies between the precautionary (pa) and limit (lim) reference points

RECENT MANAGEMENT ADVICE: summary of most recent advice.

STECF COMMENTS: The classification and associated TAC derived using the rules prescribed in the European Commission's Policy Statement on Fishing Opportunities for 2011 (COM(2010) 241 FINAL). Any comments STECF thinks worthy of mention, including errors, omissions or disagreement with assessments or advice.

Changes in the ICES Advice in 2010

STECF notes that ICES has changed the format of its advice in 2010. The advice for 2011 is given for three management approaches:

1. Transition to Maximum Sustainable Yield (MSY). ICES advises either:
    - the predicted landings in 2011 consistent with a constant fishing mortality at F_{msy} (or adivised proxy) or;

- the predicted landings consistent with a reduction in fishing mortality using a 5-step transition scheme designed to achieve F_{msy} (or advised proxy) in 2015.

A detailed description of the basis for ICES MSY advice is given in Annex 1

2. Precautionary Approach: ICES advises on the predicted landings consistent with the most restrictive of either:
   - the predicted landings in 2011 consistent with fishing at a rate that is predicted to allow the SSB to be above Bpa in 2012 or;
   - the predicted landings consistent with fishing at F_{pa} .

3. Harvest control rules defined in agreed management plans. ICES advises on the predicted landings consistent with the provisions of agreed management plans.

In addition, in the section on the outlook for 2011, ICES provides the category and TACs consistent with COM(2010) 241 FINAL.

STECF Comments on the ICES approach to advice

STECF has reviewed ICES advice and where considered appropriate, has made additional comments on such advice. STECF is in general agreement with the ICES approach of providing advice on fishing opportunities consistent with annual restrictions on fishing mortality in the context of the frameworks of MSY, precautionary approach and agreed management plans and/or policies. However, STECF notes that such an approach only provides stock-specific catch options at assumed rates of fishing mortality consistent with prescribed harvest rules and in mixed species fisheries, there is no guarantee that setting TACs consistent with such catch options will achieve MSY by 2015. Furthermore, there is a real danger that the incorporation of stock-specific MSY based catch options will prolong short-term management decision-making and compromise future management of fisheries through the development of integrated long-term management plans.

Transition to F_{msy}

STECF notes that in the context of the MSY transition framework, ICES has for some stocks provided catch options for 2011 based on two different transition schemes in an attempt to achieve F_{msy} by 2015. These are referred to as follows:

1. A transition scheme (referred to by ICES as the EU transition scheme) which prescribes a rule for calculating the TACs for 2011 – 2015 based on considerations of stepwise reductions in fishing mortality only.
2. The ICES transitions scheme which prescribes a rule for calculating the TAC for 2011-2015 based on considerations of stepwise reductions in fishing mortality and SSB in relation to $B_{trigger}$. STECF notes that in the context of the MSY framework, where F in 2010 is estimated to at or below F_{msy} but SSB in 2010 is estimated to be below $B_{trigger}$ the ICES harvest rule prescribes a target fishing mortality rate for 2011 that is below F_{msy}.

The ICES transition scheme aims to provide additional protection to the stock when SSB is less than $B_{trigger}$ and is the basis of the ICES advice when this is the case. In cases where the most recent assessment indicates that the stock is above $B_{trigger}$, the landings consistent with the fishing mortalities derived using either transition scheme are the same.

In undertaking the stock review, STECF has generally opted to give advice on the landings consistent with the fishing mortality in 2011 derived from the ICES transition scheme, because it aims to provide additional protection to stocks where there is a risk that recruitment will be impaired ($SSB<B_{trigger}$).

F_{msy} estimates

STECF notes that in the absence of an estimate of F_{msy}, the basis for many of the F_{msy}-proxy values used by ICES is not clear. As a general rule, STECF considers that in the absence of a reliable estimate of F_{msy}, the appropriate proxy for FMSY is F0.1, unless there is convincing evidence to choose an alternative value. STECF recognises that for some stocks, F0.1 may not be the most appropriate FMSY proxy and that ICES will have considered all the information available to make such a judgement, even though the rationale for choosing an alternative is not documented in its advisory report.

In addition to summarising the ICES advice in this report, and in accordance with the Commission's request to STECF, this report provides TACs for 2011 consistent with the rules laid down in ANNEXES III and IV of the Communication from the Commission on a consultation on fishing opportunities for 2011 COM(2010) 241-FINAL. STECF wishes to stress that the resulting TACs constitute a direct application of the rules laid down in ANNEXES III and IV of COM(2010) 241-FINAL and unless explicitly stated, should not be interpreted as STECF recommendations for fishing opportunities for 2011.

In responding to the Commission's request to advise on the TACs corresponding to the rules in COM(2010) 241-FINAL, STECF notes that in some instances the resulting TACs conflict with the advice from ICES on the predicted landings arising from the ICES MSY framework. In general, STECF concurs with the catch options advised by ICES. Where STECF does not concur with ICES, this is explicitly stated in the STECF comments on each stock.

STECF comments on the application of the rules for calculating TAC according to COM(2010) 241 FINAL.

STECF has noted the following:

1. The TAC resulting from the application of Annex IV, rule 4 is inconsistent with the rule prescribed for Category 6 stocks in Annex III. Whereas the rule for category 6 stocks in ANNEX III prescribes a reduction in TAC of up to 15%, Annex IV rule 4 does not permit such a reduction.
2. For stocks falling under category 6 to 9 and for which there are no estimates of F in relation to F_{msy}, there is no option to advise othere than an unchanged TAC (Rule 4) if indicators of abundance do not increase or decrease by 20% or greater (ANNEX IV, Rules 5a and 5b). In such cases, the TAC arising from COM(2010) 241-FINAL may be substantially different to both the landings consistent with the fishing mortality rate advised by STECF and the recent level of landings from the stock.

Consequences for management by TAC: an example for North Sea cod

STECF notes that for many stocks, a reduction in fishing mortality is required to move towards F_{msy} and that the landings consistent with such reductions are translated into TAC proposals. However, setting a TAC at such a level without appropriate controls on the overall catch in many case, especially mixed species fisheries, will not result in the intended reduction in fishing mortality. It will also result in increased discarding over-quota catches. This is a general problem of attemting to manage fishing mortality rates in mixed species fisheries. An example for North Sea cod is provided below to illustrate the problem and highlight potential solutions.

The Cod long-term management plan (Council Regulation (EC) 1342/2008) prescribes a TAC for 2011 based on a 20 % reduction on the 2010 TAC and a 10% reduction in fishing effort.

Assuming the 10% reduction in fishing effort results in a 10% reduction in fishing mortality this implies F = 0.77 in 2011. This is predicted to result in a total catch of 71,400 t of cod. With a TAC of 32,240 t, STECF notes that this is predicted to lead to approximately 39,000 t of discarded cod. This represents a significant increase in discarding compared to the estimated discards of 18,200 t derived from the F implied (F=0.48) by the TAC prescribed in the management plan.

STECF notes that if fully implemented, the provisions of the management plan are likely to result in a decrease in fishing effort for the main fleets that catch cod, but will have the perverse result of leading to increased discarding of cod unless additional measures to avoid catching cod can be introduced. This arises because of the incompatibility of the TAC and effort reductions prescribed by the management plan. STECF notes that there are two main potential means to attempt to eliminate or reduce discards:

1. Effort could be further restricted in an attempt to reduce the overall fishing mortality to the level required to catch the TAC prescribed by the management plan. This would imply a reduction in effort in 2011 in the region of 75% compared to that assumed for 2010. Such a measure would tend to reduce discarding to almost zero. Alternatively, to maintain the proportion of the catch discarded at its current level (36% by weight), implies that effort should be reduced by about 44%. Either of the above suggestions would undoubtedly have severe implications for the viability of most of the fleets exploiting demersal species in the North Sea.

2. In an attempt to eliminate discards, effort could be set according to the provisions of the management plan but the TAC could be set at the level of predicted total catch (all removals) commensurate with the agreed fishing effort level. For a 10% reduction in fishing effort, this implies that a TAC relating to total removals would need

to be set at about 71,400 t in 2011. STECF stresses that such a measure would need appropriate monitoring of all catches of cod and that all catches of cod should count against the agreed TAC.

Acknowledgement

The STECF review of scientific advice for 2011 Part 2 was drafted by the STECF Sub-groups on Resource Status (STECF-SGRST 10-02) held in Lyngby, Denmark from 5-9 July 2010. The Report was reviewed and adopted by the STECF at its 32nd plenary session held in Copenhagen from 12-16 July 2010.

STECF acknowledges the extensive contribution made by the following participants:

Participants SGRST 09-02 meeting in Lyngby, Denmark, 5-9 July 2010:

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The STECF review of scientific advice for 2011 Part 2 was reviewed and adopted by the STECF at its 32nd plenary session held in Copenhagen from 12-16 July 2010.

1. Resources of the North Sea

1.1. Norway lobster (*Nephrops norvegicus*) - IIa (EU zone), IIIa and North Sea (EU zone)

Assessments of the *Nephrops* Functional Units of Subarea IV utilized a number of approaches, including Underwater UWTV surveys (UWTV) surveys, length composition information, and basic fishery data such as landings and effort. Owing to uncertainties in the accuracy of historic landings and to inaccurate effort figures in some fisheries, increasing attention is paid to survey information and size composition data as an indicator of stock status.

For those stocks without UWTV surveys, assessment is made on the basis of analysis of length compositions, trends in mean length for recruit classes and commercial cpue. Biennial advice for these stocks is given for 2011 and 2012.

In 2009 there were important developments in the methodology to assess the status of *Nephrops* stocks. The use of UWTV surveys has enabled the development of fishery-independent indicators of abundance. STECF (2005) had suggested that a combination of an absolute abundance estimate from an UWTV survey and a harvest rate based on $F_{0.1}$ from a combined sex–length cohort analysis (LCA) and the mean weight and selection pattern from the commercial fishery could be used to calculate appropriate landings. The approach has been further developed and evaluated by ICES workshops in 2007 and 2009 (ICES 2007, ICES 2009). The 2009 workshop addressed concerns raised regarding factors which could potentially bias the UWTV survey results. Major sources of bias were quantified for each survey and an overall bias correction factor derived which, when applied to the estimates of abundance from the UWTV survey allows them to be treated as absolute abundance levels.

In particular the workshop concluded that the UWTV surveys detect the burrows of *Nephrops* considerably smaller than the sizes of those taken by the fishery. Therefore the abundance estimates used to calculate the Harvest Ratios presented in the advice since 2009 include a component of the stock that is too small to be exploited by the fishery. This has resulted in calculated Harvest Ratios appearing to have decreased in the current advice compared to previous estimates of Harvest Ratios. In essence, this is a scaling issue, not a change in exploitation rate. The previous proportion corresponding to fishing at $F_{0.1}$ were in the range of 15–20% whereas the revised values from the benchmark in 2009 are in the range of 8–10%.

The 2011 advice for the major *Nephrops* stocks (FUs) in the North Sea and other areas is now based on the harvest rate approach initially advocated by STECF. STECF also encourages establishing and developing UWTV surveys for other *Nephrops* functional units.

Because there is a proportion of the stock that is observed by TV surveys that is not available to the gears that catch *Nephrops*, HRs are based on the catch/fishable stock size ratio. STECF agrees with ICES that it is appropriate to estimate HRs on the catch/fishable size ratio. However, using such an approach implies historical HR estimates for each FU that are greater than were previously estimated (when compared to $F_{0.1}$, for example), since previous estimates were based on the catch/total stock size ratio.

MSY approach

There are no precautionary reference points defined for *Nephrops*. Under the new ICES MSY framework, exploitation rates which are likely to generate high long-term yield (and low probability of stock overfishing) have been explored and proposed for each functional unit. Owing to the way *Nephrops* are assessed, it is not possible to estimate F_{msy} directly and hence proxies for F_{msy} are determined. Three candidates for F_{msy} are $F_{0.1}$, $F_{35\%SpR}$ and F_{max}. There may be strong differences in relative exploitation rates between the sexes in many stocks. To account for this, values for each of the candidates have been determined for males, females and the two sexes combined. The appropriate F_{msy} candidate has been selected for each Functional Unit independently according to the perception of stock resilience, factors affecting recruitment, population density, knowledge of biological parameters and the nature of the fishery (relative exploitation of the sexes and historical Harvest Rate vs. stock status).

A decision making framework based on the table below was used in the selection of preliminary stock specific F_{msy} proxies. These may be modified following further data exploration and analysis. The combined sex F_{msy} proxy should be considered appropriate provided that the resulting percentage of virgin spawner per-recruit for males or females does not fall below 20%. In such a case a more conservative sex specific F_{MSY} proxy should be picked over the combined proxy.

		Burrow Density (average numbers/m2)		
		Low	Medium	High
		<0.3	0.3-0.8	>0.8
Observed harvest rate or landings compared to stock status	> F_{max}	$F_{35\%SpR}$	F_{max}	F_{max}
	F_{max} - $F_{0.1}$	$F_{0.1}$	$F_{35\%SpR}$	F_{max}
	< $F_{0.1}$	$F_{0.1}$	$F_{0.1}$	$F_{35\%SpR}$
	Unknown	$F_{0.1}$	$F_{35\%SpR}$	$F_{35\%SpR}$
Stock Size Estimates	Variable	$F_{0.1}$	$F_{0.1}$	F35%
	Stable	$F_{0.1}$	$F_{35\%SpR}$	F_{max}
Knowledge of biological parameters	Poor	$F_{0.1}$	$F_{0.1}$	$F_{35\%SpR}$
	Good	$F_{35\%SpR}$	$F_{35\%SpR}$	F_{max}
History Fishery	Stable spatially and temporally	$F_{35\%SpR}$	$F_{35\%SpR}$	F_{max}
	Sporadic	$F_{0.1}$	$F_{0.1}$	$F_{35\%SpR}$
	Developing	$F_{0.1}$	$F_{35\%SpR}$	$F_{35\%SpR}$

Preliminary MSY B triggers were proposed at the lowest observed UWTV abundance.
STECF notes that the estimated HRs for *Nephrops* FUs imply that in some cases, the most recent harvest rate is significantly higher than F_{msy} (or even F_{max}) and that to set catch limits for 2011 in line with F_{msy} would imply reductions in harvest rate and similar large reductions in fishing opportunities and revenue to the fleets that exploit *Nephrops*. STECF does not have the appropriate data and information to quantify the potential economic effects of such reductions. In addition, given that for most Nephrops FUs for which UWTV survey estimates are available, there does not seem to be any immediate biological risk to the stocks even at recently observed harvest rates, incremental reductions in fishing mortality towards the F_{msy} target would seem appropriate. STECF therefore suggests that fishing opportunities for each FU be set in line with successive annual adjustments in fishing mortality (HR) until F_{msy} is realised.

STECF notes that the TAC decision rules proposed in the Commission's Communication on fishing opportunities for 2011 (COM(2010)241) are intended to deliver successive annual reductions in fishing mortality along the lines suggested above and that these could be used as a basis for setting FU-specific TACs for Nephrops.

***Nephrops* Functional Units in III a and the North Sea**

Norway lobster (*Nephrops*) in the North sea (IV) and Skagerrak-Kattegat (IIIa) is assessed in a number of different stock functional units (FU) treated as separate stocks, see below. However, for management purposes the North Sea is partitioned into 2 units only: The EU EEZ and Norwegian EEZ, each of which is treated as a single unit.

FU 3&4	Skagerrak and Kattegat	EU EEZ & Norwegian EEZ
FU 5	Botney Gut	EU EEZ
FU 6	Farn Deep	"
FU 7	Fladen ground	"
FU 8	Firth of Forth	"
FU 9:	Moray Firth	EU EEZ
FU 10:	Noup	"
FU 32	Norwegian Deep	Norwegian EEZ
FU 33	Horn's Reef	EU EEZ

The *Nephrops* in FU 3 & 4 as well as *Nephrops* in FU 32 (Norwegian EEZ) are managed as separate units, but else the situation is complicated in the EU EEZ in the North Sea, where it is not possible to implement the specific biological advice for the different FUs where the management operates for the (single) EU EEZ of the North Sea. In the EU EEZ catches can be taken anywhere, and this could imply inappropriate harvest rates (HRs) from some parts. More importantly, vessels are free to move between grounds, which allow effort to develop on some grounds in a largely uncontrolled way. Management at the FU level could provide the controls to ensure that catch opportunities and effort are compatible and in line with the scale of the resources in each of the stocks defined by the Functional Units. Note that advice for 2011 based on 2010 assessments is provided for those four FUs which are covered by UWTV surveys whilst for FUs 5, 32 and 33 ICES has provided biennial advice for 20011 and 2012.

The ICES advice is presented separately for each Functional Unit in the North Sea. There are increasing and significant landings from some isolated patches outside the Functional Units, most notably the Devil's Hole area. Overall landings in Subarea IV were around 24 500 t in 2009 (an increase of 2500 t from 2008) of which landings from other rectangles amounted to more than 2,300 t. STECF agrees with ICES that the use of average landings of no more than 1900 t (2007-2009) could be considered as an allowance for the fishery in the 'other' rectangles.

STECF approach to the provision of TACs corresponding to the rules laid down in The Communication from the Commission on fishing opportunities for 2011 (COM (2010) 241 FINAL)

STECF notes that in the North Sea (which comprises eight *Nephrops* Functional Units (FUs)) the present aggregated management approach (overall TAC for all FUs) runs the risk of unbalanced effort distribution. Adoption of management initiatives to ensure that effort can be appropriately controlled in smaller areas within the overall TAC area is recommended. Furthermore, STECF notes that the current aggregated management of all *Nephrops* FUs in the North Sea as a single unit is a major obstacle for a management complying with the Commissions Communication on Fishing opportunities for 2011 (COM(2010)241 final) as the application of Annexes III and IV require a TAC for each stock (in this case FU). To facilitate the provision of advice on landings for each FU consistent with Annexes III and IV of COM(2010) 241-FINAL, STECF has derived 'partial TAC's for each FU. These values have been derived by distributing the 2010 North Sea TAC (EU EEZ) across FUs in proportion to the recent average landings (07-09) from each FU within the EU EEZ. (see below).

A summary of ICES advice and application of the Annex III & IV rules in COM(2010) 241-FINAL for those North Sea FUs in the EU EEZ is given below. It should be noted, however, that despite the provision of a North Sea total in this table, STECF still **recommends** that *Nephrops* FUs should be managed separately.

	FU5	FU6	FU7	FU8	FU9	FU10	FU33	Other	Total
Average landings (07-09)	984	2297	12492	2588	1474	139	1242	1892	23109
Derived FU 'partial TAC' 2010	1051	2454	13346	2765	1575	148	1327	2022	24688[1]
STECF Advice	Reduce landings/< 980	1600	13300	2000	1300	No advice	Reduce landings/ <1200	1900	22280[2]
Category	6	6	6	6	6	11	6	6	
Rule	IV.4	IV.1	IV.2	IV.1	IV.1		IV.4	IV.4	
Derived FU 'partial TAC' 2011	1051	1600[3]	13300	2350	1339	139	1327	2022	23128

Landings expressed in t.

[1)] EU EEZ TAC for 2010

[2)] Sum of STECF advice – uses numerical options when available

[3)] STECF considers that application of Rule IV.1 to be inappropriate given that this FU is considered to be in poor condition. Therefore STECF proposes to replace the resulting value from the rule IV.1 (2,086 t) with 1,600 t as advised.

1.1.1. Norway lobster (*Nephrops norvegicus*) in Skagerrak & Kattegat (IIIa).

FISHERIES: There are two Functional Units in this Management Area: a) Skagerrak (FU 3) and b) Kattegat (FU 4). The majority of landings are made by Denmark and Sweden, with Norway contributing only small landings from the Skagerrak. In more recent years minor landings have been taken by Germany. During the last 15 years, landings from IIIa varied between 3,000 t and 5,000 t. Peak landings of 5044 were recorded in 1998. In 2009 landings amounted to 4846t

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES and the data available include fishery data such as LPUE and biological sampling data such as length compositions from which mean sizes can be derived. Danish and Swedish UWTV surveys are currently being established and preliminary data for reliable estimates of abundance in IIIa will be reviewed later in 2010 and available for assessment in 2011.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$		No reference points are defined
	F_{msy}		No reference points are defined
Precautionary Approach			No reference points are defined

STOCK STATUS: All the available assessment data indicate, that the stock(s) in this management area are exploited at sustainable levels. However, the available information is inadequate to evaluate spawning stock or fishing mortality relative to reference points regarding MSY or the precautionary approach,. Large amount of small *Nephrops* in the catches (discards) 2007, 2008 and 2009 may indicate strong recruitment in these years.

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

RECENT MANAGEMENT ADVICE: Biennial (for 2011 and 2012) for these two FUs was provided in 2010: The state of the stock is unknown. Commercial fishery indices (lpue, landings per unit effort) have been increasing in recent years suggesting that the stock is exploited sustainably. High catch rates of small *Nephrops* in 2007, 2008 and 2009 may indicate strong recruitment in these years.

Management Objective (s)	**Landings in 2011 and 2012**
Transition to an **MSY approach** with caution at low stock size	Less than 4700 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 4700 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

MSY considerations

The state of the stock is unknown but effort data indicate an increase in lpue, suggesting that stock status is stable or increasing slightly. Therefore, following ICES MSY framework catches in 2011 should not exceed the average of the past 3 years, 4700 tonnes.

PA considerations

The assessment presented for this stock does not allow for optional forecasts. The combined Danish and Swedish effort data indicate an increase in lpue, suggesting that stock status is stable or increasing slightly. Therefore, catches in 2011 should not exceed the average of the past 3 years, 4700 tonnes

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified as a category 6 stock because the state of the stock is not known precisely but there is advice for an appropriate catch level. According to Annex IV.4 this would imply an unchanged TAC. ICES currently advises no catches for cod in IIIa, which is a significant by-catch species in the *Nephrops* fisheries. The current effort regulation (limiting days at sea for gears not using selective sorting grids) may increase the incentives to use sorting grids. This may reduce by-catch of cod.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2010) 241 FINAL) on a consultation on fishing opportunities for 2011, STECF agrees with ICES that *Nephrops* in IIIa falls under Category 6. Accordingly STECF notes that according to rule 4 in Annex IV in the above category, this implies an unchanged TAC for 2011 and 2012 of 5200 t. This is approximately 10 % higher than the reduced TAC advised by ICES, but STECF is of the opinion that an unchanged TAC would fit better to the current stock situation as suggested by ICES and therefore advises a TAC of 5200 t for 2011. In this connection STECF also notices some rigidity in the newly introduced MSY framework by ICES, especially for stocks where no reference points are available. STECF also notes that assessments of these FUs based on UWTV surveys will be available from 2011. STECF agrees with the ICES in its advice of no catches for cod in IIIa, which is a significant by-catch species in the *Nephrops* fisheries.

1.1.2. Norway lobster (*Nephrops norvegicus*) in Botney Gut (FU 5).

FISHERIES: Landings from Botney Gut were 719 t in 2009. Up to 1995, the Belgian fleet used to take over 75% of the international landings from this stock, but since then, its share has dropped to less than 6%. Long-term effort of the Belgian *Nephrops* fleet has shown an almost continuous decrease since the all-time high in the early 1990s. In 2009 around 30% of the total international landings were taken by Dutch trawlers for first sale in the Netherlands or in Belgium, and more than 30 % by UK trawlers. STECF notices that there has been a considerable increase in UK landings from this FU in the same period as the landings from Farn has decreased.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Biennial advice (for 2010 and 2011) for this FU was provided in 2010. Information on this FU is considered inadequate to provide advice based on precautionary limits. The perception of the stock is based on development in LPUEs

REFERENCE POINTS:

	Type	***Value***	***Technical basis***
MSY Approach	MSY $B_{trigger}$		No reference points are defined
	F_{msy}		No reference points are defined
Precautionary Approach	Not defined		

STOCK STATUS: The state of this stock is unknown. LPUE indicators show no trends for different fleets in recent years.

	F (Fishing Mortality)		
	2007	2008	**2009**

MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	UWTV abundance		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

RECENT MANAGEMENT ADVICE:

Advice summary for 2011 and 2012

Management Objective (s)	**Landings in 2011 and 2012**
Transition to an **MSY approach** with caution at low stock size	Reduce landings from recent level
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 980 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

No reliable assessment can be presented for this stock, because of insufficient data. There are been relatively few biological data available from the fishery and there is currently no TV survey for this FU. Therefore, fishing possibilities cannot be projected.

MSY considerations

The state of the stock is unknown but lpue is fluctuating without trend indicating a stable stock status. Therefore, following the ICES MSY framework implies that landings in 2011 should be reduced from recent level. ICES cannot quantify the rate of reduction required.

PA considerations

In light of the fact that lpue is fluctuating without trend indicating a stable stock status, landings in 2011 should not exceed 980 t (the average of the past 3 years).

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 6 because the state of the stock is unknown but advice for an appropriate catch level is available. Indicators have been stable in recent years. ICES notes that the TAC and the stock assessment areas do not match.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

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With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that FU5 *Nephrops* falls under Category 6 because the state of the stock is unknown but advice for an appropriate catch level is available.
Accordingly STECF notes that the rules 4 in Annex IV for the above category would imply an unchanged TAC for FU 5 in 2011 of 1051 t if managed by a separate TAC (following the approach given in Section 1.1).

STECF **recommends** that the various *Nephrops* FUs are managed separately.

1.1.3. Norway lobster (*Nephrops norvegicus*) in the Farn Deep (FU 6)

FISHERIES: Total landings from Farn increased in 2009: from 1218 t in 2008 to 2711 t in 2008 an increase of around 100% reaching the level of 2007 but still far below the level in 2006. The UK fleet has accounted for virtually all landings from the Farn Deeps. Estimated discarding during this period has fluctuated around 40% by weight of the catch in the Farn Deeps.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based UWTV surveys of absolute abundance. At the ICES Benchmark Workshop on *Nephrops* in 2009 major sources of bias were quantified for the TV surveys and an overall bias correction factor derived which, when applied to the estimates of abundance from the UWTV surveys, allows them to be treated as absolute abundance levels.

REFERENCE POINTS:

	Type	***Value***	***Technical basis***
MSY	MSY $B_{trigger}$	958 million	Bias-corrected UWTV survey index at start of current decline (2007)
Approach	F_{msy}	Harvest ratio 12.9%	Equivalent to $F_{35\%SpR}$ combined sex in 2010
Precautionary	$F_{0.1}$	Not Agreed	
Approach	F_{max}	Not Agreed	

STOCK STATUS: The UWTV survey, fishery data and length frequency data all point to the stock continuing to be at a low level.

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	⊖	⊕	⊖
Precautionary approach (F_{pa},F_{lim})	?	?	?

	UWTV abundance		
	2008	2009	**2010**
MSY ($B_{trigger}$)	⊖	⊖	⊖
Precautionary approach (B_{pa},B_{lim})	?	?	?

The UWTV survey, fishery data and length frequency data all point to the stock continuing to be at a low level.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Less than 1 600 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

MSY approach

Following the ICES MSY framework implies Harvest Ratio to be reduced to 10.3 % (20% lower than F_{msy} because SSB is 20% below Btrigger), resulting in landings of 1 400 t in 2011.

Following the transition scheme towards the ICES MSY framework implies fishing mortality to be reduced to $(0.8*F_{2010} + 0.2*F_{msy})$ = 14.3 % with an additional reduction of 20% since SSB is below MSY Btrigger= 11.2 %, resulting in landings of 1600 t in 2011.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified as a category 6 stock. Annex IV.1 would apply as the stock is overfished with respect to F_{msy}. ICES notes that the TAC area and the stock assessment area do not match.

To protect the stock in this Functional Unit, management should be implemented at the Functional Unit level.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that FU6 *Nephrops* falls under Category 6. Accordingly STECF notes that the rule IV.1 for the above category would imply a TAC in 2011 of 2086 t if managed by a separate TAC. This is based on a 15% reduction on the 2010 partial TAC of 2454 t for this FU (See Section 1.1). However, STECF considers that application of Rule IV.1 to be inappropriate given that this FU is considered to be in poor condition. Therefore STECF propose to replace the resulting value from the rule IV.1 (2086) with 1600 (the advice).

STECF **recommends** that the various *Nephrops* FUs are managed separately.

1.1.4. Norway lobster (*Nephrops norvegicus*) in Fladen Ground (FU 7) (Division IVa)

FISHERIES: There is only one Functional Unit in this area: FU 7 (Fladen Ground). Small quantities of landings are taken outside the main Fladen Ground Functional Unit.The fleet fishing the Fladen Ground for *Nephrops* comprises approximately 100 trawlers, which are predominantly Scottish (> 97%), based along the Scottish NE coast. Nearly three quarters of the landings are made by single-rig vessels and one-quarter by twin-rig vessels. 80mm mesh is the commonest mesh size. Nearly 40% of the *Nephrops* landings at Fladen are reported as by-catch, in fisheries which may be described as mixed. In 2009 total landings amounted to 13327 t, a 10% increase compared to 2008 landings. U.K (Scotland) accounted for 99 %, the remaining part being Danish. Discarding rates averaged over the period 2005 to 2007 for this stock were 18% by number, or 11% by weight.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based UWTV surveys of absolute abundance. At the ICES Benchmark Workshop on *Nephrops* in 2009 major sources of bias were quantified for the surveys and an overall bias correction factor derived which, when applied to the estimates of abundance from the UWTV survey, allows them to be treated as absolute abundance levels.

REFERENCE POINTS:

	Type	***Value***	***Technical basis***
MSY	MSY $B_{trigger}$	2767 million individuals	Bias-adjusted lowest observed UWTV survey estimate of abundance
Approach	F_{msy}	Harvest ratio 10.2%	Equivalent to $F_{0.1}$ combined sex in 2010
Precautionary Approach	Not defined		

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	✓	✓	✓
Precautionary approach (F_{pa},F_{lim})	?	?	?

	UWTV abundance		
	2008	2009	**2010**
MSY ($B_{trigger}$)	✓	✓	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The perception of the state of the stock has not changed substantially since the assessment in 2009. The UWTV abundance is still at a high level relative to the historical time series although there has been a 25 % reduction in 2009 from the 2008 value. The stable mean sizes in the length compositions of catches (of individuals >35 mm CL) and recent estimated harvest ratios (removals/TV abundance) relative to per-recruit reference points suggest that the stock is being exploited sustainably.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
MSY approach with caution at low stock size	Less than 13 300 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Na
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	Na

MSY approach

Following the ICES MSY framework implies the harvest ratio to be increased to 10.2 %, resulting in landings of less than 13 300 t in 2011.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 1, because the stock is fished below the MSY harvest rate. The resulting landings for this FU would be 13 300 t in 2011.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that FU7 *Nephrops* falls under Category 6. Accordingly STECF notes that the rule IV.2 for the above category would imply a TAC in 2011 of around 13,300 t if managed by a separate TAC. This is based on rule IV.2 (increase the partial TAC in line with a harvest ratio of F_{msy}).

STECF **recommends** that the various *Nephrops* FUs are managed separately.

1.1.5. Norway lobster (*Nephrops norvegicus*) in Firth of Forth (FU 8)

FISHERIES: Landings from the Firth of Forth fishery are predominantly reported from Scotland, with very small contributions from England. The area is periodically visited by vessels from other parts of the UK. Estimated discarding rates are 43% by number (24% by weight) in the Firth of Forth. Similar to levels recorded since the beginning of the data series in 1985. In the 3 recent years annual landings have been around 2500 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based UWTV surveys of absolute abundance. At the ICES Benchmark Workshop on *Nephrops* in 2009 major sources of bias were quantified for the TV surveys and an overall bias correction factor derived which, when applied to the estimates of abundance from the UWTV survey, allows them to be treated as absolute abundance levels.

REFERENCE POINTS:

	Type	***Value***	***Technical basis***
MSY	MSY $B_{trigger}$	292 million individuals	Bias-adjusted lowest observed UWTV survey estimate of abundance
Approach	F_{msy}	Harvest ratio 15 %	Equivalent to F_{max} combined sex in 2010
Precautionary Approach	Not defined		

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	2009
MSY (F_{msy})	⊖	⊖	⊖
Precautionary approach (F_{pa},F_{lim})	?	?	?

	UWTV abundance		
	2008	2009	2010
MSY ($B_{trigger}$)	⊕	⊕	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The perception of the state of the stock has not changed substantially since the assessment in 2009. The UWTV abundance has been at a relatively high level since 2003 and the 15 % reduction observed in 2009 is within the confidence bounds of the 2008 value. The TV survey information, taken together with information showing stable mean sizes, suggest that the stock does not show signs of overexploitation. The calculated harvest ratio in 2009 (dead removals/TV abundance) is above F_{max}.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Less than 2 000 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

MSY approach

Following the ICES MSY framework implies the harvest ratio should be reduced to 15 %, resulting in landings of less than 1400 t in 2011.

Following the transition scheme towards the ICES MSY framework implies the harvest ratio should be reduced to 21.7 % (0.8* F_{2010}+ 0.2*F_{msy}), resulting in landings of 2000 t in 2011.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified as a category 6 stock. Annex IV.1 would apply as the stock is overfished with respect to F_{msy}. ICES notes that the TAC area and the stock assessment area do not match.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast based catch option for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that FU8 *Nephrops* falls under Category 6. Accordingly STECF notes that the rules for the above category would imply a TAC in 2011 of 2350 t if managed by a separate TAC. This is based on (IV.1) a 15% reduction of the partial 2010 TAC of 2765 t (See Section 1.1). .

STECF **recommends** that the various *Nephrops* FUs are managed separately.

1.1.6. Norway lobster (*Nephrops norvegicus*) in Moray Firth (FU 9)

FISHERIES: Landings from this fishery are predominantly reported from Scotland, with very small contributions from England in the mid-1990s, but not recently. About three quarters of the landings are made by

single-rig trawlers, a high proportion of which use a 70-mm mesh. In 1999, twin-rig vessels predominantly used a 100 mm mesh, with 90% of the twin-rig landings made using this mesh size. Legislative changes in 2000 permitted the use of an 80 mm mesh. Total estimated landings in 2009 were 1066 t, a more than 30% decline compared to 2008 landings.

Discarding rates averaged over the period 2006 to 2008 for this stock were about 6% by number. This represents a marked reduction in discarding rate compared to the average for the period 2003 to 2005.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based UWTV surveys of absolute abundance. At the ICES Benchmark Workshop on *Nephrops* in 2009 major sources of bias were quantified for the TV survey and an overall bias correction factor derived which, when applied to the estimates of abundance from the UWTV survey, allows them to be treated as absolute abundance levels.

REFERENCE POINTS:

	Type	***Value***	***Technical basis***
MSY	MSY $B_{trigger}$	262 million individuals	Bias-adjusted lowest observed UWTV survey estimate of abundance (1997)
Approach	F_{msy}	Harvest ratio 12.7 %	Proxy, equivalent to $F_{35\%SPR}$ combined sex in 2010
Precautionary Approach	Not defined		

STOCK STATUS:

F (Fishing Mortality)			
	2007	2008	**2009**
MSY (F_{msy})	⊖	⊖	⊕
Precautionary approach (F_{pa},F_{lim})	?	?	?

	UWTV abundance		
	2008	2009	**2010**
MSY ($B_{trigger}$)	⊕	⊕	⊕
Precautionary approach (B_{pa},B_{lim})	?	?	?

The perception of the state of the stock has not changed substantially since the assessment in 2009. The TV survey suggests that the population is stable, but at a lower level than that evident from 2003–2005.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	< 1 300 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

MSY approach

Following the ICES MSY framework implies the harvest ratio should be decreased to 12.7 %, resulting in landings of less than 1200 t in 2011.

Following the transition scheme towards the ICES MSY framework implies the harvest ratio to be increased to 13.7 % (0.2 x harvest ratio(F_{2010})+ 0.8 x harvest ratio(F_{msy})), resulting in landings of less than 1300 t in 2011.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified as a category 6 stock. Annex IV.1 would apply as the stock is overfished with respect to F_{msy}. ICES notes that the TAC area and the stock assessment area do not match.
STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that FU9 *Nephrops* falls under Category 6. Accordingly STECF notes that the rules for the above category would imply a TAC in 2011 of 1339 t if managed by a separate TAC. This is based on a 15% reduction (Rule IV.1) on the partial TAC for 2010 (1575 t) towards the landings associated with the F_{msy} harvest ratio(See section 1.1).

STECF **recommends** that the various *Nephrops* FUs are managed separately.

1.1.7. Norway lobster (*Nephrops norvegicus*) in the Noup (FU 10)

FISHERIES: Landings from this fishery are predominantly reported from Scotland. Total landings in 2009 amunted to 89 t, a 50% decline compared to 2008.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on LPUEs and size composition data. There is only limited UWTV survey data on abundance and there is no assessment based on UWTV survey data. Biennial advice (for 2011 and 2012) for this FU was provided in 2010.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$		No reference points are defined
	F_{msy}		No reference points are defined
Precautionary Approach	Not defined		

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

There are no LPUE figures available (no reliable effort data), and no discard sampling is taking place. Therefore there is no assessment-based advice for 2011 and 2012.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011 and 2012**
Transition to an **MSY approach** with caution at low stock size	n/a
Cautiously avoid impaired recruitment (**Precautionary Approach**)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

ICES provides no advice for this stock for 2011 and 2012. No reliable assessment can be presented for this stock. The main cause of this is a lack of data. The time series of UWTV survey data is incomplete and no survey has been conducted in 2008 or 2009. There are no reliable effort data for this FU and therefore no resulting lpue.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 11 because there is insufficient information to give advice for this stock.
STECF COMMENTS: STECF agrees with ICES, that the state of the stock is unknown.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that *Nephrops* in Noup (FU 10) falls under Category 11. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of the same level as the catch in recent years (2007-2009) = 139 t and if relevant, no increase in fishing effort. However, no separate TAC is set for this functional unit.

1.1.8. Norway lobster (*Nephrops norvegicus*) in the Norwegian Deep, FU 32 (Division IVa, East of 2° E + rectangles 43 F5-F7).

FISHERIES: Landings from this area in 2008 were 477 t, a 30 % decline compared to 2008 landings. The majority of the landings from this FU are made by Denmark (> 80%) and Norway. Since 2002 annual landings have decreased from around 1200 t to less than 500 t and this is due to substantial decreases in Danish effort for *Nephrops* in this area.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Information on this stock is inadequate to provide advice based on precautionary limits. Biennial advice (for 2011 and 2012) for these two FUs were provided in 2010. The perception of the stock status is based on Danish LPUE data.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	-	No reference points are defined
	F_{msy}	-	No reference points are defined
Precautionary Approach	Not defined		

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

Landings per unit effort (lpue) have been relatively stable over the last 16 years and suggest that current levels of exploitation are sustainable. A slight increase in mean size in the catches in 2007 could indicate a reduced exploitation pressure.
RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011 and 2012**
Transition to an **MSY approach** with caution at low stock size	Reduce landings from recent level

Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 640 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

No reliable assessment can be presented for this stock. The main cause of this is lack of data and a UWTV survey. Therefore, fishing possibilities cannot be projected.

MSY considerations

The state of the stock is unknown but lpue is fluctuating without trend indicating a stable stock status. Following the ICES MSY framework landings in 2011 should be reduced from recent level. ICES cannot quantify the rate of reduction required.

PA considerations

In light of the fact that lpue is fluctuating without trend indicating a stable stock status, landings in 2011 should not exceed 640 t (the average of the past 3 years).

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 6 because the state of the stock is unknown but advice for an appropriate catch level is available. Indicators have been stable in recent years. ICES notes that the TAC and the stock assessment areas do not match.

Additional considerations

Recent trends in overall size distribution in the catches indicate that the *Nephrops* stock in the Norwegian Deep is not overexploited. The trend in lpue does not indicate any decline in stock abundance. ICES concludes that the level of exploitation of this stock is sustainable. Historic average annual landings have been approximately 1000 t (2002–2007), while recent average landings are 575 t (2008–2009).

STECF COMMENTS: Although STECF agrees with the ICES that the state of the stock is unknown. STECF disagrees with the ICES advice which strictly adheres to PA considerations based on fluctuating LPUEs. For this stock there have been no signs of decline in stock, and the decreased landings are due to decreased targeting of *Nephrops* in FU 32. STECF also notes the lack of survey data for this stock.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that *Nephrops* in FU 32 falls under Category 6. Accordingly STECF *notes that* the rules for the above category imply a TAC in 2011 of 1200 t , based on Annex IV, rule 4 (unchanged TAC compared to 2010).

1.1.9. Norway lobster (*Nephrops norvegicus*) in Horns Reef (FU 33)

FISHERIES: For several years Denmark was the only country exploiting *Nephrops* in this FU, and accounted for more than 90% of total landings up to 2005. However in recent years Germany and Netherlands have expanded their share of this stock. In 2007 total landings amounted to 1,467 t, and were the highest recorded. In 2009landings had declined to a total of 1163 t

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Biennial advice (for 2011 and 2012) for this FU has been provided in 2010. Information on this stock is considered inadequate to provide advice based on precautionary limits. The perception of the stock is based on LPUE and length distribution in the catches.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY	MSY $B_{trigger}$	-	No reference points are defined

Approach	F_{msy}	-	No reference points are defined
Precautionary Approach	Not defined		

STOCK STATUS: The state of this stock is unknown. LPUE has been increasing up to 2008, probably reflecting increase in gear efficiency (technological creep) in the last years. The mean sizes in 2005 catches and the increased LPUEs in the subsequent years could indicate a high recruitment in 2005. The development in 2009 then suggests that the contribution of the 2005 recruitment to the stock now has faded.

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011 and 2012**
Transition to an **MSY approach** with caution at low stock size	Reduce landings from recent level
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 1 200 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

MSY considerations

The state of the stock is unknown but lpue and recruitment indications suggest no major changes in stock status. Following the ICES MSY framework landings in 2011 should be reduced from recent level. ICES cannot quantify the rate of reduction required.

PA considerations

In light of the fact that lpue and recruitment indications suggest no major changes in stock status, landings in 2011 should not exceed 1200 t (the average of the past 3 years).

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 6 because the state of the stock is unknown but advice for an appropriate catch level is available. Indicators have been stable in recent years. ICES notes that the TAC and the stock assessment areas do not match.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that *Nephrops* in FU 33 falls under Category 6. Accordingly STECF notes that the rules for the above category imply an unchanged TAC (Annex IV, rule 4). Applying this rule to the partial TAC for 2010 (See section 1.1), results in a TAC of 1327 t for 2011.

1.2. Northern shrimp (*Pandalus borealis*) on Fladen Ground (Division IVa)

The stock summary and advice for Northern shrimp (Pandalus borealis) on Fladen Ground (Division IVa) will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice on this stock is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

1.3. Northern shrimp (*Pandalus borealis*) in Division IIIa (West) and Division IVa East (Skagerrak and Norwegian Deeps)

The stock summary and advice for Northern shrimp (Pandalus borealis) in Division IIIa (West) and Division IVa East (Skagerrak and Norwegian Deeps) will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice on this stock is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

1.4. Cod (*Gadus morhua*) in the Kattegat

FISHERIES: Cod in the Kattegat is exploited by Denmark, Sweden, and Germany. The fishery is conducted by both trawl and gillnets. Landings fluctuated between 4,000 and 22,000 t (1971-2001). Landings have decreased continuously since then. Reported landings were 197 t in 2009. Fishery-independent information indicates that removals from the stock are substantially higher than reported landings and that the mismatch between TAC/official landings and the total removals has increased in the most recent years.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is considered indicative of trends only. The assessment is based on the recently developed stochastic state-space model (SAM) that provides statistically sound estimates of uncertainty in the model results. The model allows estimating potential additional removals from the stock, not represented by reported landings. The stock estimates for these years consequently rely more on survey information.

MANAGEMENT AGREEMENT: The EU has adopted a long-term plan for cod stocks and the fisheries exploiting those stocks (Council Regulation (EC) 1342/2008). This regulation repeals the recovery plans in Regulation (EC) No 423/2004, and has the objective of ensuring the sustainable exploitation of the cod stocks on the basis of maximum sustainable yield while maintaining a target fishing mortality of 0.4 on specified age groups.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	Not defined	
Precautionary Approach	B_{lim}	6 400 t	lowest observed SSB before the late 1990s.
	B_{pa}	10 500 t	B_{lim}*exp(1.645*0.3).
	F_{lim}	Not defined	
	F_{pa}	Not defined	

STOCK STATUS:

F (Fishing Mortality)			
	2007	2008	2009
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	2010
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	⛔	⛔	⛔

Spawning stock biomass has been at a historically lowest level since 2000. Recruitment in recent years has been the lowest in the time series. Current level of fishing mortality is unknown and is likely somewhere in between the estimates from the two runs, with and without estimating unallocated removals.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	Landings in 2011
Transition to an **MSY approach** with caution at low stock size	n/a
Cautiously avoid impaired recruitment (**Precautionary Approach**)	No directed fisheries, minimise by-catches
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

Due to uncertainty in the recent estimates, especially concerning fishing mortality, reliable predictions cannot be made.

MSY considerations: The state of the stock is unknown and given the low recruitment and the fact that spawning biomass is at historically lowest level in recent years it is not relevant to provide MSY based advice.

PA considerations: Due to the historical low recruitment and stock biomass the catches should be set to zero for 2011.

Management plan: According to the long-term management plan, the fishing mortality in 2011 shall be reduced by 25 % compared with the fishing mortality rate in 2010, unless the target 0.4 is reached. The current level of fishing mortality on cod in the Kattegat cannot be reliably estimated. According to Article 9 in the management plan, TAC should be reduced by 25 % in cases when it is advised that the catches of cod should be reduced to the lowest possible level. An exploratory evaluation (see section below) that assumed no bias in the TAC implementation shows that SSB will recover before 2015 to within precautionary limits; however, this evaluation is not expected to be realistic in a situation where unaccounted removals may be up to five times the TAC.

STECF COMMENTS:

STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that cod in the Kattegat falls under Category 4. STECF notes that in accordance with the long-term management plan, landings in 2011 should be 284 t. (This figure is calculated on the basis of a 25 % reduction in TAC. See Article 9 of long-term management plan.).

STECF notes it is unclear from ICES advice whether ICES considers the cod long-term management plan (Council Regulation (EC) 1342/2008) to be consistent with the precautionary approach. ICES states that in a situation where unaccounted removals may be up to five times the TAC, a TAC constraint alone (under Article 9) is not precautionary. However, under article 12 of the management plan fishing effort is adjusted by the same percentage as the TAC.

1.5. Cod (*Gadus morhua*), in the North Sea (IIa, IIIa Skagerrak, IV and VIId)

FISHERIES: North Sea cod are exploited by fleets from Belgium, Denmark, The Netherlands, Germany, France, Sweden, Norway, and UK. Small catches are also taken by fleets from Poland and the Faroe Islands. Cod are taken mainly by mixed fisheries using otter trawls, seine nets, gill nets, long-lines and beam trawl. The

stock is managed by TAC through joint negotiation between the EU and Norway, technical and supporting effort regulations in units of days at sea per vessel since 2003. Historically, landings peaked at about 350,000 t in the early 1970s, subsequently declining to around 200,000 t by 1988. From 1989 until 1998, landings remained between about 100 000 t and 140,000 t. Reported landings decreased sharply in 1999 to 96,000 t, and then declined steadily to 24,400 t in 2007. Reported landings for 2008 and 2009 were about 26 800 t and 30 800t respectively. The assessment area for this stock includes ICES Divisions IIIa (Skagerrak), VIId and Sub-area IV, which are different management areas and for which separate TACs are set.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment used the age-based model (B-ADAPT) incorporating landings and discards, and calibrated with two survey indices (from IBTS quarter 1 and quarter 3 surveys). For ICES Subarea IV and Divisions VIId, discards were estimated from the Scottish discards sampling program up until 2005, raised to the total international fleet. For 2006, Denmark provided its own discard estimates. For 2007, 2008 and 2009 Scottish, Danish, German, and England & Wales discard estimates were combined and used to raise landings-at-age for remaining nations in Subarea IV. Discards in Division IIIa were based on observer estimates. For 2006-2009, Danish and Swedish discard estimates were combined to raise landings-at-age from the remaining nations in Division IIIa.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	150 000 t	The default option of $\mathbf{B}_{pa}$
	F_{msy}	0.19	Provisional proxy is F_{max} 2010, within the range of Fishing mortalities consistent with F_{msy} (0.16 - 0.42)
Precautionary approach	B_{lim}	70 000 t	$\mathbf{B}_{loss}$ **(~1995)**
	B_{pa}	150 000 t	$\mathbf{B}_{pa}$ = Previous MBAL and signs of impaired recruitment below 150 000 t.
	F_{lim}	0.86	$\mathbf{F}_{lim} = \mathbf{F}_{loss}$ (~1995)
	F_{pa}	0.65	$\mathbf{F}_{pa}$ = Approx. 5th percentile of $\mathbf{F}_{loss}$, implying an equilibrium biomass > $\mathbf{B}_{pa}$.

MANAGEMENT AGREEMENT: In 2005 the EU and Norway revised their initial agreement from 1999 and agreed to implement a long-term management plan for the cod stock. This plan was again updated in December 2008 and entered into force on 1 January 2009. The plan aims to be consistent with the precautionary approach and is intended to provide for sustainable fisheries and high yield leading to a target fishing mortality to 0.4. The main changes between the 2009 and 2005 plans is a phasing (transitional and long-term phase) and the inclusion of an F reduction fraction. That is:

Transitional arrangement:
F will be reduced as follows: 75 % of F in 2008 for the TACs in 2009, 65 % of F in 2008 for the TACs in 2010, and applying successive decrements of 10 % for the following years.
The transitional phase ends as from the first year in which the long-term management arrangement leads to a higher TAC than the transitional arrangement.

F reduction fraction
If the size of the stock on 1 January of the year prior to the year of application of the TACs is:

- Above the precautionary spawning biomass level, the TACs shall correspond to a fishing mortality rate of 0.4 on appropriate age groups;
- Between the minimum spawning biomass level and the precautionary spawning biomass level, the TACs shall not exceed a level corresponding to a fishing mortality rate on appropriate age groups equal to the following formula:
- 0.4 - (0.2 * (Precautionary spawning biomass level - spawning biomass) / (Precautionary spawning biomass level - minimum spawning biomass level))
- At or below the limit spawning biomass level, the TAC shall not exceed a level corresponding to a fishing mortality rate of 0.2 on appropriate age groups.

The plan shall be subject to triennial review, the first of which will take place before 31 December 2011.

The EU has adopted a long-term plan for this stock with the same aims as the EU-Norway plan (Council Regulation (EC) 1342/2008).

ICES has evaluated the EU management plan in 2009 and considers it to be in accordance with the precautionary approach if it is implemented and enforced adequately. Discarding in excess of the assumptions

under the management plan will affect the effectiveness of the plan. The evaluation is most sensitive to assumptions about implementation error (i.e. TAC and effort overshoot and the consequent increase in discards).

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})			
Precautionary approach (F_{pa},F_{lim})			

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)			
Precautionary approach (B_{pa},B_{lim})			

SSB has increased since its historical low in 2006, but remains below B_{lim}. Fishing mortality declined after 2000, and although its most recent trajectory is considered uncertain, it is estimated to be well above the long-term objectives of maximum yield, and likely above Fpa. Recruitment since 2000 is poor. The assessment this year is considered more uncertain than the assessment conducted last year.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Less than 18 100 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Zero
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	32 240 t

MSY approach: Following the ICES MSY framework implies fishing mortality to be reduced to 0.07 (lower than F_{msy} because SSB 2011 < MSY Btrigger), resulting in landings *including unallocated removals* of less than 5 700 t in 2011. This is expected to lead to an SSB of 93 400 t in 2012.

Following the transition scheme towards the ICES MSY framework implies fishing mortality to be reduced to ((0.85*0.8) + (0.19 *0.2)) = 0.72 but because SSB 2011 < MSY Btrigger fishing mortality should be further reduced accordingly to the ratio (SSB2011/MSYBtrigger) to 0.24. This results in landings *including unallocated removals* of less than 18 100 t in 2011. This is expected to lead to an SSB of 79 300 t in 2012.

PA approach: Even a zero catch in 2011 is not expected to result in SSB reaching B_{pa} in 2012.

Management plan: The EU–Norway agreement management plan as updated in December 2008 aims to be consistent with the precautionary approach and is intended to provide for sustainable fisheries and high yield leading to a target fishing mortality to 0.4. (for details see Annex 6.4.2).

The EU has adopted a long-term plan for this stock with the same aims (Council Regulation (EC) 1342/2008). In addition to the EU-Norway agreement the EU plan also includes effort restrictions reducing kw-days available to community vessels in the main metiers catching cod in direct proportion to reductions in fishing mortality until the target F of 0.4 has been reached. This implies a 13.3% reduction in effort in 2010.

In both plans fishing mortality should be reduced to levels corresponding to75% of F2008 in 2009 and 65% of F2008 in 2010. As long as the long-term phase of the management plans is not reached, in subsequent years further successive reductions of 10% have to be applied leading to a F in 2011 equal to 55% of F2008. This would lead to a TAC reduction of more than 20%. The management plans limits annual TAC variation to 20%. According to these rules, landings should be 32 240 tonnes in total for Subarea IV and Divisions IIIa West and VIId in 2011.

In spite of uncertainty in the assessment, all models and scenarios suggest that the management objectives in terms of reduction of fishing mortality specified in the LTMP cannot be achieved in 2011 unless catches are reduced beyond the 20% limit on inter-annual variability.

STECF COMMENTS:

STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that cod in the North Sea (IIa, IIIa Skagerrak, IV and VIId) falls under Category 4. STECF notes that in accordance with the long-term management plan, the TAC for 2011 for IIa, IIIa Skagerrak, IV and VIId combined should be 32,240 t (20% reduction in TAC compared to 2010). Furthermore, the management plan also stipulates that effort (kW days) should be reduced in line with the prescribed reductions in fishing mortality. This implies that the maximum effort in kW days in 2011 should be 55% of the baselines assumed for 2008. Accordingly this represents a 15.4% reduction in permitted effort in 2011 compared to 2010.

STECF notes that the measures prescribed by the management plan, if fully implemented and enforced will result in a significant reduction in fishing mortality.

ICES recognises that the assessment this year is considered more uncertain than the assessment conducted in 2009. STECF notes that the uncertainty in the ICES assessment primarily relates to the imprecision and potential bias in the terminal estimates of F and SSB but that such uncertainty has no effect on the measures prescribed by the long-term management plan for 2011. The imprecision in the estimated F for 2009 however will potentially compromise any quantitative evaluation of Member States' performance in relation to the provisions of the management plan for cod stocks (Council Regulation (EC) 1342/2008).

Other considerations

STECF also notes that the advice for cod in Divisions IIa(EU waters), IIIa(Skagerrak), IV and VIId for 2011 may be subject to change pending the results of a potential re-assessment in the light of additional new data from surveys undertaken in the summer of 2010. Any such change in the advice will be incorporated in the Consolidated STECF review of advice for 2011, which will be published in November 2010.

STECF notes that the value for F_{msy} for cod in the North Sea (IIa, IIIa Skagerrak, IV and VIId) is provisional and may be subject to revision pending the outcome of further investigations by ICES in the summer of 2010.

1.6. Haddock (*Melanogrammus aeglefinus*) in IIa (EU zone), in Sub-area IV (North Sea) and Division IIIa (Skagerrak- Kattegat)

FISHERIES: North Sea haddock is exploited predominantly by fleets from the UK (Scotland), Norway and Denmark. Most landings are for human consumption and are taken by towed gears, although there is a small by-catch in the small-mesh industrial fisheries. Substantial quantities are discarded in some years when new year-classes recruit to the fishery. Over 1963-2006, catches have ranged from 55,000 t to 930,000 t. In recent years catches have decreased and the estimates for 2005 to 2009 represent the lowest on record. A contributory factor to the lower catches in recent years has been the maintenance of low fishing mortality rate.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. The age-based assessment model (XSA) is calibrated with three survey indices. Discards and industrial by-catch data were included in the assessment. Discards were estimated from the discards sampling programme from several countries, with most observations coming from Scotland.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	140 000 t	Default to value of B_{pa}
	F_{msy}	0.3	Provisional proxy is the management target F_{mgt}, within the range of Fishing mortalities consistent with F_{msy} (0.25 – 0.48)
Precautionary Approach	B_{lim}	100 000 t	Smoothed Bloss.
	B_{pa}	140 000 t	$B_{\mathbf{pa}} = 1.4 * B_{lim}$.
	F_{lim}	1.0	$F_{lim} = 1.4 * F_{\mathbf{pa}}$.

	F_{pa}	0.7	10% probability that SSBMT < B_{pa}.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	O	⊕	⊕
Precautionary approach (F_{pa},F_{lim})	⊕	⊕	⊕

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	⊕	⊕	⊕
Precautionary approach (B_{pa},B_{lim})	⊕	⊕	⊕

Fishing mortality has been below F_{pa} and SSB is above MSY Btrigger since 2001. Recruitment is characterized by occasional large year-classes, the last of which was the strong 1999 year class. Apart from the 2005 and 2009 year classes which are about average, recent recruitment has been poor.

MANAGEMENT AGREEMENT: In 1999 the EU and Norway agreed to implement a long-term management plan for the haddock stock, which is consistent with the precautionary approach and which is intended to constrain harvesting within safe biological limits (SSB > B_{lim}) and is designed to provide for sustainable fisheries and high potential yield (F_{HCR} = 0.3). A revised management plan was implemented in January 2009.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
MSY approach with caution at low stock size	Less than 36 000 t Human Consumption
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 74 000 t Human Consumption
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	36 000 t Human Consumption

ICES has developed a generic approach to evaluate whether new survey information that becomes available in September forms a basis to update the advice. If this is the case, ICES will publish new advice in October 2010.

MSY approach : Following the ICES MSY framework implies fishing mortality to be increased to 0.3, resulting in human consumption landings of less than 36 000 t in 2011. This is expected to lead to an SSB of 218 000 t in 2012

PA approach: The fishing mortality in 2011 should be no more than F_{pa} corresponding to human consumption landings of less than 74 000 t in 2011. This is expected to bring SSB above B_{pa} in 2012.

Management plan : In 2008 the EU and Norway agreed a revised management plan for this stock, which states that every effort will be made to maintain a minimum level of SSB greater than 100 000 t (B_{lim}). Furthermore, fishing was be restricted on the basis of a TAC consistent with a fishing mortality rate of no more than 0.30 for appropriate age groups, along with a limitation on interannual TAC variability of ±15%. Following a minor revision in 2008, interannual quota flexibility ("banking and borrowing") of up to ±10% is permitted (although this facility has not yet been used). The stipulations of the management plan have been adhered to by the EU and Norway since its implementation in January 2007.

Following the management plan implies a TAC of 36 152t in 2011 which is expected to lead to a TAC reduction of 5% and an effort increase of 29%.

STECF COMMENTS:

STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that haddock in IIa (EU zone), in Sub-area IV (North Sea) and Division IIIa (Skagerrak- Kattegat) falls under Category 4. STECF notes that in accordance with the long-term management plan, human consumption landings in 2011 should be 36,152 t.

STECF notes that the measures prescribed by the management plan, if fully implemented and enforced will maintain fishing mortality at or around F_{msy}.

STECF notes that the value for F_{msy} for haddock in IIa (EU zone), in Sub-area IV (North Sea) and Division IIIa (Skagerrak- Kattegat) is provisional and may be subject to revision pending the outcome of further investigations by ICES in the summer of 2010.

STECF notes that the advice for haddock in Divisions IIa, IV and IIIa for 2011 may be subject to change pending the results of a potential re-assessment in the light of additional new data from surveys undertaken in the summer of 2010. Any such change in the advice will be incorporated in the Consolidated STECF review of advice for 2011, which will be published in November 2010.

1.7. Saithe (*Pollachius virens*) in Divisions IIa (EU zone), IIIa, Subareas IV (North Sea) and VI (West of Scotland).

FISHERIES: In the various areas over which this stock is distributed, saithe are primarily taken in a direct trawl fishery in deep water along the Northern Shelf edge and the Norwegian Trench. In the first quarter of the year the fisheries are directed towards spawning aggregations, while smaller fish are targeted during the rest of the year. Gill-nets are also used, and there is still a small purse seine fishery in Norwegian coastal waters. Norway has introduced 120 mm mesh size in trawls, but in EU waters 110 mm may still be used by the EU fleets. Saithe is also taken as part of the mixed roundfish fishery. The stock is exploited by nations including Norway, France, Germany, the UK, Ireland, Spain and Denmark. Between 1967-2006, ICES Working Group reported landings have varied between 88,326t and 343,967t and have been relatively stable over the last 21 years (mostly just over 100,000 t). In 2009 landings were 112,492 t. The stock is managed by TAC. Separate TACs are set for Saithe in IIa (EU zone), IIIa, North Sea combined (Sub-area IV) and Sub-area VI.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on an age-based assessment (XSA) calibrated using data from two commercial cpue series and indices from two surveys. There are no discard estimates for the majority of this fishery. Discarding of saithe occurs in the non-targeted fisheries, but the level of discard is considered to be small compared to the total catch of saithe.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	200 000 t	Default value B_{pa}
	F_{msy}	0.30	Stochastic simulation using hockey-stick stock-recruitment
Precautionary approach	B_{lim}	106 000 t	B_{loss} = 106 000 t (estimated in 1998).
	B_{pa}	200 000 t	affords a high probability of maintaining SSB above B_{lim}
	F_{lim}	0.6	F_{loss} the fishing mortality estimated to lead to stock falling below B_{lim} in the long term.
	F_{pa}	0.4	implies that $B_{eq} > B_{pa}$ and $P(SSB_{MT} < B_{pa}) < 10\%$.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	⊕	⊕	?
Precautionary approach (F_{pa},F_{lim})	⊕	⊕	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	⊕	⊕	?
Precautionary approach (B_{pa},B_{lim})	⊕	⊕	?

? = not available

An update assessment could not be run in 2010 due to missing and incomplete indices for 2009. The assessment of the 2009 working group meeting has been used as a basis for the forecast run that has been extended to 4 years. SSB is estimated to have been above B_{pa} from 2001–2008. From 2001–2008, F has been at or below the fishing mortality target of the management plan (0.3).

MANAGEMENT AGREEMENT:

In 2008 EU and Norway renewed the existing agreement on *"a long-term plan for the saithe stock in the Skagerrak, the North Sea and west of Scotland, which is consistent with a precautionary approach and designed to provide for sustainable fisheries and high yields. The plan shall consist of the following elements.*

1. *Every effort shall be made to maintain a minimum level of Spawning Stock Biomass (SSB) greater than 106,000 tonnes (Blim).*
2. *Where the SSB is estimated to be above 200,000 tonnes the Parties agreed to restrict their fishing on the basis of a TAC consistent with a fishing mortality rate of no more than 0.30 for appropriate age groups.*
3. *Where the SSB is estimated to be below 200,000 tonnes but above 106,000 tonnes, the TAC shall not exceed a level which, on the basis of a scientific evaluation by ICES, will result in a fishing mortality rate equal to 0.30-0.20*(200,000-SSB)/94,000.*
4. *Where the SSB is estimated by the ICES to be below the minimum level of SSB of 106,000 tonnes the TAC shall be set at a level corresponding to a fishing mortality rate of no more than 0.1.*
5. *Where the rules in paragraphs 2 and 3 would lead to a TAC which deviates by more than 15 % from the TAC of the preceding year the Parties shall fix a TAC that is no more than 15 % greater or 15 % less than the TAC of the preceding year.*
6. *Notwithstanding paragraph 5 the Parties may where considered appropriate reduce the TAC by more than 15 % compared to the TAC of the preceding year.*
7. *A review of this arrangement shall take place no later than 31 December 2012.*
8. *This arrangement enters into force on 1 January 2009."*

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
MSY approach with caution at low stock size	Less than 103 000 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 125 000 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	103 000 t

MSY approach: Following the ICES MSY approach implies fishing mortality to be marginally increased to 0.30, resulting in landings of 103 000 t in 2011. This is expected to lead to an SSB of 219 000 in 2012.

PA approach: Fishing mortality would have to be increased by 27% to reduce SSB to B_{pa} in 2012. This corresponds to landings of less than 125 000 t in 2011.

Management plan: The agreed EU–Norway management plan (Annex 6.4.12) includes: 1) Maintain the SSB above 106 000 t, and 2) exploitation at F = 0.3 when the stock is above B_{pa}. In the current situation, the management results in landings of 103 000 t in 2011. This is expected to lead to an SSB of 219 000 in 2012 and the change in TAC is within the 15% specified as maximum in the management plan.

The management plan was evaluated by ICES in 2008 (ICES Advice 2008, Book 6, Section 6.3.3.3), and the management plan is considered by ICES to be consistent with the precautionary approach in the short term (< 5 years).

STECF COMMENTS: STECF agrees with the ICES advice

STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that saithe in Divisions IIa (EU zone), IIIa, Subareas IV (North Sea) and VI (West of Scotland) falls under Category 4. STECF notes that in accordance with the long-term management plan, human consumption landings in 2011 should be 103 000 t.

STECF notes that the measures prescribed by the management plan, if fully implemented and enforced will maintain fishing mortality at or around F_{msy}.

STECF further notes that although saithe is assessed together in area IV and VI, TACs are set separately for areas IV and VI. Saithe in the North Sea are mainly taken in a directed trawl fishery. STECF therefore considers the management advice for saithe in the North Sea to be compatible with the advice for North Sea cod provided the fishery for saithe can be shown to comply with the advice from ICES on fisheries with an incidental catch of cod.

The fishery in Subarea VI consists largely of a directed deep-water fishery operating on the shelf edge but includes a mixed fishery operating on the shelf. Therefore STECF considers the management advice for saithe in area VI must take into account the management adopted for area VI cod (no catch and discards for cod).

STECF notes that the value for F_{msy} for saithe in Divisions IIa (EU zone), IIIa, Subareas IV (North Sea) and VI (West of Scotland) is provisional and may be subject to revision pending the outcome of further investigations by ICES in the summer of 2010.

1.8. Whiting (*Merlangius merlangus*), Skagerrak & Kattegat (IIIa)

FISHERIES: The majority of whiting landed from the Skagerrak and Kattegat are taken as by-catch in the small-mesh industrial fisheries. Some are also taken as part of a mixed demersal fishery. As in the North Sea stock, landings decreased in the Skagerrak and Kattegat drastically and were below 2,000 t since 1997. Nominal landings for 2009 were 243 t.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Not defined	-
	F_{msy}	Not defined	-
Precautionary approach	Not defined		

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The available landing data provide insufficient information on the stock status.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	Landings in 2011
Transition to an **MSY approach** with caution at low stock size	n/a
Cautiously avoid impaired recruitment (**Precautionary Approach**)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

No reliable assessment can be presented for this stock. Therefore, fishing possibilities cannot be projected.

Policy paper: In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 11

STECF COMMENTS:

STECF agrees with the ICES assessment that the state of the stock is unknown.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that whiting in Division IIIa falls under Category 11. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 893 t based on a 15% reduction in TAC.

1.9. Whiting (*Merlangius merlangus*) in Subarea IV (North Sea) and Division VIId (Eastern Channel)

FISHERIES: Whiting are taken as part of a mixed fishery, as well as a by-catch in fisheries for *Nephrops* and industrial species. Substantial quantities are discarded. Historically total catches have varied considerably ranging between 25,000 and 153,000 t. In 2009, the Working Group estimated that about 26 200 t were caught. The human consumption landings were around 19 320 t with a TAC for 2009 of 15,173 t.

Whiting are caught in mixed demersal roundfish fisheries, fisheries targeting flatfish, the *Nephrops* fisheries, and the Norway pout fishery. The current minimum mesh-size in the targeted demersal roundfish fishery in the northern North Sea has resulted in reduced discards from that sector compared with the historical discard rates. Mortality has increased on younger ages due to increased discarding in the recent year as a result of recent changes in fleet dynamics of *Nephrops* fleets and small mesh fisheries in the southern North Sea. The by-catch of whiting in the Norway pout and sandeel fisheries is dependent on activity in that fishery, which has recently declined after strong reductions in the fisheries. These are low values based on the assumption of a similar by-catch rate to that observed in previous years, when the industrial fisheries were at a low level. A larger catch allocation for by-catch may be required if industrial effort increases.

Catches of whiting in the North Sea are also likely to be affected by the effort reduction seen in the targeted demersal roundfish and flatfish fisheries, although this will in part be offset by increases in the number of vessels switching to small mesh fisheries.

Recent measures to improve survival of young cod, such as the Scottish Credit Conservation Scheme, and increased uptake of more selective gear in the North Sea and Skagerrak, should be encouraged for whiting.

The minimum mesh size increased to 120 mm in the northern area in 2002 and this may have contributed to the substantial decrease in reported landings. Landings compositions from the northern area, in 2006 and 2007, indicate improved survival of older ages. In addition, the total number of fish discarded appears to have been significantly reduced since 2003, from around 60% in 2003 to around 27% in 2009.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. The stock assessment is based on an XSA assessment, calibrated with two survey indices. Commercial catch-at-age data were disaggregated into human consumption, discards, and industrial by-catch components.

REFERENCE POINTS:

	Type	***Value***	***Technical basis***
MSY Approach	MSY $B_{trigger}$	Undefined	
	F_{msy}	Undefined	
Precautionary Approach		Undefined	

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

SSB in 2009 is slightly higher than in 2008 but remains below average. Fishing mortality has been stable over the last 4 years. Recruitment has been very low between 2003 and 2007 with stronger recruitments estimated in 2008 and 2009, however the size of these recruitments are uncertain.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	n/a
Cautiously avoid impaired recruitment (**Precautionary approach**)	Less than 12 700 t Human Consumption
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

ICES has developed a generic approach to evaluate whether new survey information that becomes available in September forms a basis to update the advice. If this is the case, ICES will publish new advice in November 2010.

The human consumption landings in Subarea IV and Division VIId are calculated as 75% and 25% of the combined area total on the basis of estimates of landings for the past three years.

MSY approach: There are no reference points to enable MSY advice.

PA considerations: There are no reference points to enable precautionary advice. A 50 % reduction in F is needed to maintain SSB at the 2010 level. This corresponds to human consumption landings of less than 12 700 t in 2011 corresponding to 9 500 t from Subarea IV and 3 200 t from Division VIId.

Policy paper: Following the EU Commission consultation paper on TACs for 2010 (17 May 2010, COM(2010) 241) this stock is classified under category 6, because there are no reference points to compare the state of the stock with, but there is a quantitative advice. Under category 6, this advice would be followed with a maximum reduction of 15%, resulting in a TAC of 14 600 t.

Under Annex IV, this stock would not qualify under point 5 because the average of SSB in the last 2 years compared to the average of the 3 preceding years shows an increase of 18%. This means the stock would be classified under point 4, no change in TAC. ICES has not evaluated this rule in relation to the precautionary approach.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that whiting in Division IV and VIId falls under Category 6.

Accordingly STECF notes that the rules for the above category imply a TAC for whiting in IV and VIId in 2011 of 17, 200 t. This is derived using ANNEX IV, rule 4.

STECF notes that the advice for whiting in Divisions IV and VIId for 2011 may be subject to change pending the results of a potential re-assessment in the light of additional new data from surveys undertaken in the summer of 2010. Any such change in the advice will be incorporated in the Consolidated STECF review of advice for 2011, which will be published in November 2010.

1.10. Anglerfish (*Lophius piscatorius)* in IIa (EU zone), North Sea IV, IIIa

FISHERIES: Anglerfish are taken as a by-catch by towed gears in the Skagerrak (IIIa), Northern North Sea and IIa, with an increasing directed trawl fishery in the deeper areas of the Northern North Sea (where 90% or more of the Area IV landings are taken). The fishery is dominated by the Scottish fleet, which takes around 70% to 90% of the total landings in this area. ICES estimates of landings of anglerfish from the North Sea show a rapid increase in the late 1980s from about 10000 t to about 27000 t (1997) followed by a decrease between 9 500 t and 12 000 t in the last 7 years. Provisional official landings for 2009 are given as 11, 047 t.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. The stock in the North Sea was formerly treated as a separate assessment unit, but the assessment has since 2004 been combined with that in Sub-Area VI – see Section 2.9.

STECF COMMENTS: ICES considers Anglerfish in Sub-areas IV and VI and Division IIIa a single stock. For management purposes, anglerfish on the entire Northern Shelf are currently, split into 3 management units: 1) Sub-area VI (including Vb (EC), XII and XIV), 2) the North Sea (including IIIa and the EU waters of IIa), and 3) IIa, Norwegian waters. However, it is noticed by ICES, that anglerlfish in IIIa has not been included in the EU management (annual "Council Regulations of the fishing opportunities etc."). Since there are no national regulations for anglerfish in IIIa STECF **recommends** that IIIa is included in the EU management as well as in the EU-Norway agreement.

1.11. Brill (*Scopthalmus rhombus*) in the North Sea

ICES has not assessed this stock and STECF has no access to any stock assessment information on brill in this area.

A precautionary TAC (including turbot) in areas IIa and IV for 2010 was set to 4 739 t.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Brill in the North Sea falls under Category 11. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 4 127 t which is the average of recent catches (2007-2008-2009) and falls within the 15% TAC constraint.

1.12. Dab (*Limanda limanda*) IIa (EU zone), North Sea

ICES has not assessed this stock and STECF has no access to any stock assessment information on dab in this area.

A precautionary TAC (including flounder) in areas IIa and IV for 2010 was set to 18,810 t.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Dab in the North Sea falls under Category 11. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 15 989 t which is the average of recent catches (2007-2008-2009) with a 15% TAC constraint.

1.13. Flounder (*Platichthys flesus*) - IIa (EU zone), North Sea

ICES has not assessed this stock and STECF has no access to any stock assessment information on flounder in this area.

A precautionary TAC (including dab) in areas IIa and IV for 2010 was set to 18 810 t.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Flounder in the North Sea falls under Category 11. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 15 989 t which is the average of recent catches (2007-2008-2009) with a 15% TAC constraint.

1.14. Lemon sole (*Microstomus kitt*) in the North Sea

STECF did not have access to any stock assessment information on Lemon sole in this area.

A precautionary TAC (including witch) in areas IIa and IV for 2010 was set to 6 521 t.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Lemon sole in the North Sea falls under Category 11. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 5 543 t which is the average of recent catches (2007-2008-2009) with a 15% TAC constraint.

1.15. Megrim (*Lepidorhombus whiffiagonis.*) in IIa (EU zone), North Sea

Megrim in IIa and IV are assessed together with megrim in Subarea IV. The stock summary and advice is given in Section 2.11.

1.16. Plaice (*Pleuronectes platessa*) in Kattegat and Skagerrak (Division IIIa)

FISHERIES: Plaice is caught all year round with a predominance from spring to autumn. The plaice catches in this area are taken in fisheries using seine, trawl and gill nets targeting mixed species for human consumption. Plaice is an important by-catch in a mixed cod-plaice fishery. Denmark and Sweden account for the majority of the landings while only minor landings are taken the German, Norwegian and, occasionally, vessels from Belgium and the Netherlands. Landings fluctuated between 7,700 and 16 500 t. (1980-1999). Landings in 1998 1999 and 2000 were amongst the lowest around 8 500 t. The landings increased to 11 560 t in 2001 but subsequently decreased and amounted to 6 905 in 2005 and 9 400 in 2006 compared to a TAC of 9,600 t. Landings in 2007, 2008 and 2009 are estimated to be 8 800 t, 8 600 t and 6 700 t respectively.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

REFERENCE POINTS: No

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Undefined	
	F_{msy}	Undefined	
Precautionary approach	B_{lim}	Undefined	
	Bpa	24 000 t	smoothed Bloss (no sign of impairment).
	F_{lim}	Undefined	
	F_{pa}	0.73	F_{med}

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**

MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The assessment is exploratory only and the different approaches give conflicting results with regard to trends in SSB, F and recruitment. There is no change in the perception of the stock since the 2007 assessment: All survey indices indicate that abundance and recruitment of plaice in IIIa are substantially higher during the last 6 to 8 years than in the 1990s.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Less than 8 000 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 8 000 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

MSY considerations: The state of the stock is unknown but all survey indices indicate that abundance and recruitment of plaice in IIIa are substantially higher during the last 6 to 8 years than in the 1990s. Therefore, following the ICES MSY approach landings in 2011 should be less than 8 000 t, the average level of the last 3 years (2007–2009).

PA considerations: The data available for this stock gave no reason to revise the perception of the stock condition. The advice on this stock for the fishery in 2011 is therefore: "Landings should not exceed the average level of the last 3 years (2007–2009), corresponding to landings less than 8 000 t.

Policy paper: In the light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 6; The state of the stock is not known precisely but there is numerical advice for appropriate catches. This would mean the advice should be followed with a maximum TAC change of 15%. The resulting TAC would be a 15% TAC reduction to 9 935 t in 2011. ICES has not evaluated this policy paper.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that plaice in Division IIIa falls under Category 6. Accordingly STECF notes that the rules for the above category (Annex IV, rule 4) imply an unchanged TAC in 2011 of 11,688 t. STECF notes that this is inconsistent with the advice from ICES for 2011 and STECF **recommends** that the TAC for plaice in Division IIIa in 2011 is set in line with ICES' advice.

STECF further notes that fisheries for plaice in Division IIIa are linked to those exploiting sole and that this linkage should be taken into account when implementing management rules for either stock.

1.17. Plaice (*Pleuronectes platessa*) in Subarea IV (North Sea)

FISHERIES: North Sea plaice is taken mainly in a mixed flatfish fishery by beam trawlers in the southern and south eastern North Sea with a minimum mesh size of 80 mm. This mesh size catches plaice under the minimum landing size of 27 cm, which induces high discard rates (in the range of 50% by weight). Directed fisheries are also carried out with seine and gill net, and by beam trawlers in the central North Sea with a minimum mesh size of 100 - 120 mm depending on area. Fleets involved in this fishery are the Netherlands, UK, Belgium, Denmark, France, Germany and Norway. Landings fluctuated between 70 000 and 170 000 t (1987-2002) and are predominantly taken by EU fleets. The 2003, 2004, 2005, 2006 and 2007 landings of 66 500 t, 61 400t 55 700 t, 57 900 t and 49 700 t respectively were the lowest recorded since 1957. Landings in 2008 reached a record low of 48 900 t. The 2009 landings are 55 000 t.

The combination of days-at-sea regulations, high oil prices, and the decreasing TAC for plaice and the relatively stable TAC for sole, appear to have induced a more southern fishing pattern in the North Sea. This concentration of fishing effort results in increased discarding of juvenile plaice that are mainly distributed in those areas. This process could be aggravated by movement of juvenile plaice to deeper waters in recent years where they become more susceptible to the fishery. Also the lpue data show a slower recovery of stock size in the southern regions that may be caused by higher fishing effort in the more coastal regions.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on an age-based assessment using landings and discards, calibrated with three survey indices.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	230 000 t	Default to value of B_{pa}.
	F_{msy}	0.20	Provisional estimate, F_{max} in 2010. MSY reference points to be re-evaluated prior to the 2012 advice.
Precautionary approach	B_{lim}	160 000 t	B_{loss} = 160 000 t, the lowest observed biomass in 1997 as assessed in 2004.
	B_{pa}	230 000 t	Approximately 1.4 B_{lim}.
	F_{lim}	0.74	F_{loss} for ages 2–6.
	F_{pa}	0.60	5th percentile of F_{loss} (0.6) and implies that $B_{eq}>B_{pa}$[1)] and a 50% probability that $SSB_{MT} \sim B_{pa}$.

MANAGEMENT AGREEMENTS: The management agreement (1999), previously agreed between the EU and Norway was not renewed for 2005 and since that year has not been in force. A multiannual plan for fisheries exploiting stocks of plaice and sole in the North Sea was established on 11 June 2007 (Council Regulation (EC) No 676/2007). This plan has two stages. The first stage aims at an annual reduction of fishing mortality by 10% in relation to the fishing mortality estimated for the preceding year, with a maximum change in TAC of +or- 15% until the precautionary reference points are reached for both plaice and sole in two successive years. ICES has interpreted the F for the preceding year as the estimate of F for the year in which the assessment is carried out. The basis for this F estimate in the preceding year will be a constant application of the procedure used by ICES in 2007. In the second stage, the management plan aims for exploitation at F = 0.3.

ICES has evaluated the agreed long-term management plan (Council Regulation (EC) No. 676/2007) for plaice and sole. For plaice, the management plan evaluation is not yet conclusive with regards to consistency with the precautionary approach due to the following shortcomings:

- Lack of robustness to the starting values for population abundance
- Systematic over-estimation of historic landings
- Under-estimation of bias and variance in the assessment model

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	⊖	⊖	⊖
Precautionary approach (F_{pa},F_{lim})	⊕	⊕	⊕

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	⊕	⊕	⊕
Precautionary approach (B_{pa},B_{lim})	⊕	⊕	⊕

The stock is well within precautionary boundaries. Recruitment has been around long-term average from 2005 onwards.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	Landings in 2011
Transition to an **MSY approach** with caution at low stock size	Less than 64 200 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 144 400 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

ICES has developed a generic approach to evaluate whether new survey information that becomes available in September forms a basis to update the advice. If this is the case, ICES will publish new advice in November 2010.

MSY approach: Following the ICES MSY framework implies fishing mortality to be reduced to 0.2 (provisional $F_{msy} = F_{max}$), resulting in landings of 56 100 t in 2011. This is expected to lead to an SSB of 545 700 t in 2012.

Following the transition scheme towards the ICES MSY framework implies fishing mortality to be reduced to ((0.24*0.8) + (0.20 *0.2)) =0.23, resulting in landings of 64 200 t in 2011. This is expected to lead to an SSB of 532 500 t in 2012.

PA approach: The fishing mortality in 2011 should be no more than F_{pa} (0.6) corresponding to landings of less than 144 400t in 2011. This is expected to keep SSB above B_{pa} in 2012.

Management plan: Following EU Council Regulation (EC) No 676/2007 implies increasing F to the target value of 0.3, with a maximum TAC increase of 15%. For 2011 the latter applies, resulting in a TAC of 73 400 t. This is expected to lead to an increase in SSB to 517 700 t in 2012.

The EU management plan for North Sea plaice and sole (Council Regulation (EC) No. 676/2007, see Appendix 6.4.7) results in a TAC of 73 400 t and an effort increase of 12% in 2011. An initial evaluation of the plan by ICES could not reach a conclusion about whether the plan was precautionary. However, a catch of 73 400 t can be considered precautionary for 2011, given it is well below the catch according to the precautionary approach, resulting in a larger SSB and a smaller F compared to the precautionary approach option.

STECF COMMENTS:

STECF agrees with the ICES assessment of the state of the stock.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that plaice in Division IV falls under Category 4. This implies that landings in 2011 should be 73,400 t. (This figure is calculated on the basis of a 15 % increase in TAC). STECF **recommends** that the catch options for 2011 advised by ICES are not used as the basis for management in 2011 and considers that the values derived from the management plan are more appropriate for the management of exploitation on plaice in 2011.

STECF notes that the measures prescribed by the management plan, if fully implemented and enforced will maintain fishing mortality slightly above the provisional F_{msy} value used by ICES. STECF notes that the value for F_{msy} for plaice in the North Sea is provisional and may be subject to revision pending the outcome of further investigations by ICES in the summer of 2010.

STECF notes that the advice for plaice in Divisions IV for 2011 may be subject to change pending the results of a potential re-assessment in the light of additional new data from surveys undertaken in the summer of 2010. Any such change in the advice will be incorporated in the Consolidated STECF review of advice for 2011, which will be published in November 2010.

Implications for plaice in Subarea IV of a proposal to set separate TACs for plaice in VIId and VIIe

In response to a special request from the Commission for advice on whether separate TACs for plaice in VIId and VIIe would help with management of these stocks, STECF has proposed two candidate methods for allocating separate TACs taking into account migration rates between subarea IV and VIIe in to VIId during the first quarter of the year (See section 3.13).

In summary, STECF has proposed two candidate methods for allocating TACs to VIId and VII e separately, both of which aim to ensure that the removals from each stock component are consistent with the advised fishing mortality in 2011.

Option 1 suggests allocation of TACs to VIIe and VIId separately based on the advised fishing mortality rates for each stock component and in an attempt to ensure that there is no catch of plaice that migrate into VIId from VIIe and IV, Division VIId could be closed in Q1 to all gears likely to catch plaice. This option requires no adjustment to the TAC corresponding to the advised fishing mortality on North Sea plaice.

Option 2 suggests allocation of TACs to VIIe and VIId separately based on the advised fishing mortality rates for each stock component and adjusting the TAC according to the procedure outlined in Section 3.13. Using this procedure to calculate the landings corresponding to the fishing mortality advised by STECF (stock landings) and the adjusted (area landings) for VIIe, VIId and Subarea IV would be as follows:

	Plaice VIIe	Plaice VIId	Plaice IV
Landings corresponding to STECF advice (stock landings)	890	3,400	73,400
Adjusted landings(area landings)	758	4,018	72,914

1.18. Plaice (*Pleuronectes platessa*) in Division VIId (Eastern English Channel)

FISHERIES: The stock is exploited predominantly in a mixed flatfish fishery by otter and beam trawlers. French offshore otter trawlers have a directed fishery in winter. Countries involved in this fishery are Belgium, France and the UK. Landings fluctuated between 2,000 and 10,000 t (1976-2007). Landings fluctuated hardly in the last decennia but declined slightly from 5,800 t in 2002 to 3,500 t in 2008. The landings for 2009 are incomplete.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on an age-based assessment using commercial and survey data.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Undefined	
	F_{msy}	Undefined	
Precautionary approach	B_{lim}	5 600 t	$\mathbf{B_{loss}}$ (~1995)
	B_{pa}	8 000 t	1.4 $\mathbf{B_{lim}}$
	F_{lim}	0.54	$\mathbf{F_{loss}}$ (~1995)
	F_{pa}	0.45	5th percentile of $\mathbf{F_{loss}}$; long-term SSB >$\mathbf{B_{pa}}$ and P(SSB_{MT}<$\mathbf{B_{pa}}$) < 10%.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The current assessment is indicative for trends only. SSB since 2004 is stable at a low level. F varies without trend around the long-term average..

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Reduce landings from recent level
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 3 400 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

As concluded in WKFLAT 2010, no reliable assessment can yet be presented for this stock. Additional work is required in order to increase the quantity and quality of the discard estimates, improve the relevance of the commercial tuning series, and examine the sensitivity of the assessment to the 65% adjustment to the Q1 catch at age.

MSY considerations : The state of the stock is unknown but SSB since 2004 is stable though at a low level. Therefore, following the ICES MSY framework landings in 2011 should be reduced from recent level. ICES cannot quantify the rate of reduction required.

PA considerations: The data available for this stock gave no reason to revise the perception of the stock condition. The advice on this stock for the fishery in 2011 is therefore: "Landings should not exceed the average level of the last 3 years (2007–2009), corresponding to landings less than 3 400 t. These landings correspond to the total landings reported in VIId and not only the landings used in the 2010 assessment.

Policy paper: In the light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 6.4, for this stock only relative measures of stock biomass are available and these show a stable SSB, resulting in unchanged catches. The resulting catches for area VIId should then remain the same as last year for this area. The TAC for VIId is set together with VIIe.

STECF COMMENTS:

STECF agrees with the ICES assessment of the state of the stock.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that plaice in Division VIId falls under Category 6. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 3,400 t. (AS no separate TAC is set for VIId plaice, this figure is calculated on the basis of a 3 years (2007–2009) average landings). (See also section 3.14 for the VIIe TAC component).

Noting that the TAC resulting from the application of the rules in (COM (2010) 241 FINAL) is the same as that advised by ICES under the precautionary approach , the information is insufficient to permit STECF to recommend an appropriate catch level for plaice in VIId in 2011 consistent with the aim of achieving F_{msy} in 2015.

STECF reiterates its previous comments:

i) Due to the minimum mesh size (80 mm) in the mixed beam trawl fishery, a large number of undersized plaice are discarded. Discard estimates are not included in the assessment. The 80-mm mesh size is not matched to the minimum landing size of plaice (27 cm). Measures taken specifically directed at sole fisheries will also impact the plaice fisheries.

iii) Finally, the lack of discard information also adds to the overall uncertainty of the status of the stock since discards are not included in the assessment.

Special request on Plaice in the Eastern English Channel

Advice provided for plaice in VIIe and for plaice in VIId for 2010 are substantially different, concomitant with the advice that these two stocks are biologically distinct. At present, these two stocks are managed under a single TAC which makes it impossible to independently manage each stock towards precautionary criteria or towards maximum sustainable yield. The Commission is considering proposing the separation of the VIId,e TAC into two separate TACs in order that separate biological objectives can be reached.

STECF is requested to advise whether such an approach is appropriate to attempt to achieve stock-specific biological objectives and if not, to advise (given current knowledge of stock identities and migrations) on an alternative approach to attaining the same goal.

STECF is requested to deliver its advice in July in the course of its review of ICES advice.

STECF response

The STECF response to the special request on plaice in the Eastern English Channel is given together with the response for plaice in VIIe in section 3.13 (plaice in Division VIIe)

In summary, STECF has proposed two candidate methods for allocating TACs to VIId and VII e separately, both of which aim to ensure that the removals from each stock component are consistent with the advised fishing mortality in 2011.

Option 1 suggests allocation of TACs to VIIe and VIId separately based on the advised fishing mortality rates for each stock component and in an attempt to ensure that there is no catch of plaice that migrate into VIId from VIIe and IV, Division VIId could be closed in Q1 to all gears likely to catch plaice. The landings corresponding to the fishing mortality advised by STECF for 2011 under this option would be 890 t for VIIe and 3,400 t for VIId.

Option 2 suggests allocation of TACs to VIIe and VIId separately based on the advised fishing mortality rates for each stock component and adjusting the TAC according to the procedure outlined in Section 3.13. Using this procedure to calculate the landings corresponding to the fishing mortality advised by STECF (stock landings) and the adjusted (area landings) for VIIe, VIId and Subarea IV would be as follows:

	Plaice VIIe	Plaice VIId	Plaice IV
Landings corresponding to STECF advice (stock landings)	890	3,400	73,400
Adjusted landings(area landings)	758	4,018	72,914

1.19. Sole (*Solea solea*) in Division IIIa

FISHERIES: The fishery is mainly conducted by Denmark, with smaller landings taken by Germany and Sweden. Significant amounts of sole are taken as by-catch in the fishery for *Nephrops*. Landings fluctuated between 200 t and 1,400 t (1971-2007). In 2008 and 2009 landings were 655 t and 640 t respectively.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. The advice is based on an age-based assessment using cpue data from three commercial tuning series (reference fleets) and one scientific survey series. During the period 2002–2004 there was considerable misreporting due to limiting TACs and weekly quota, which were included in the assessment. Since mid-2005, the increase in TAC and improved control are believed to have resulted in insignificant misreporting.

REFERENCE POINTS:

	Type	***Value***	***Technical basis***
MSY Approach	MSY $B_{trigger}$	2000 t	lowest observed SSB excluding 1984-85 low SSB's
	F_{msy}	0.38	Provisional value based on Stochastic simulations. F associated with highest yield and low prob. of SSB<Btrigger

Precautionary Approach	B_{lim}	undefined	
	B_{pa}	undefined	
	F_{lim}	0.47	F_{med} 98 excluding the abnormal years around 1990
	F_{pa}	0.30	consistent with F_{lim}

STOCK STATUS:

F (Fishing Mortality)			
	2007	2008	**2009**
MSY (F_{msy})	+	+	+
Precautionary approach (F_{pa},F_{lim})	o	o	+

SSB (Spawning Stock Biomass)			
	2008	2009	**2010**
MSY ($B_{trigger}$)	+	−	+
Precautionary approach (B_{pa},B_{lim})	?	?	?

SSB has decreased since 2005, but is still above MSY $B_{trigger}$. Fishing mortality has been stable slightly below F_{msy} since 2005. Recruitment has been about average since 2003.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
MSY approach with caution at low stock size	Less than 840 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 680 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

MSY approach: Following the ICES MSY framework implies increasing fishing mortality to F_{msy} (0.38), resulting in landings of 840 t in 2011. This is expected to lead to a SSB of 2670 t in 2012.

PA approach: The fishing mortality in 2011 should be no more than F_{pa} corresponding to landings of less than 680 t in 2011.

Policy paper: In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 1 because it is currently fished at an F lower than F_{msy}. The resulting TAC would be 840 t, based on fishing at F_{msy} with a maximum TAC variation of 25%. This is consistent with the ICES advice based on the ICES MSY framework.

STECF COMMENTS:

STECF agrees with the ICES assessment of the state of the stock and the advised catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that sole in Division IIIa falls under Category 1. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 840 t representing a 20% increase on the 2010 TAC.

1.20. Sole (*Solea solea*) in Sub-area IV (North Sea)

FISHERIES: Sole is mainly taken by beam trawl fleets in a mixed fishery for sole and plaice in the southern part of the North Sea. A relatively small part of the catch is taken in a directed fishery by gill-netters in coastal areas, mostly in the 2nd quarter of the year. The stock is exploited predominantly by The Netherlands with smaller

landings taken by Belgium, Denmark, France, Germany and the UK. Landings have fluctuated between 11,000 and 35 000 t (1957-2007). The landings in 2008 and 2009 are around 14 100 t and 14 000 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on an age-based assessment using commercial and survey data.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	35 000 t	Default to value of B_{pa}
	F_{msy}	0.22	Provisional estimate, median of stochastic MSY analysis assuming Ricker Stock-Recruit relationship (range 0.13-0.39)
Precautionary Approach	B_{lim}	25 000 t	B_{loss}
	B_{pa}	35 000 t	$B_{pa}1.4*B_{lim}$
	F_{lim}	Not defined	
	F_{pa}	0.4	F_{pa} = 0.4 implies $B_{eq} > B_{pa}$ and $P(SSB_{MT} < B_{pa}) < 10\%$

MANAGEMENT AGREEMENTS: A multiannual plan for fisheries exploiting stocks of plaice and sole in the North Sea was established on 11 June 2007 (Council Regulation (EC) No 676/2007). This plan has two stages. The first stage aims at an annual reduction of fishing mortality by 10% in relation to the fishing mortality estimated for the preceding year, with a maximum change in TAC of +or- 15% until the precautionary reference points are reached for both plaice and sole in two successive years. ICES has interpreted the F for the preceding year as the estimate of F for the year in which the assessment is carried out. The basis for this F estimate in the preceding year will be a constant application of the procedure used by ICES in 2007. In the second stage, the management plan aims for exploitation at F = 0.2.

ICES has evaluated the agreed long-term management plan (Council Regulation (EC) No. 676/2007) and concluded that it leads on average to a low risk of $B < B_{lim}$ within the next 10 years. ICES conclude that for sole the management plan can be provisionally accepted as precautionary.

STOCK STATUS:

F (Fishing Mortality)	2007	2008	2009
MSY (F_{msy})	⊖	⊖	⊖
Precautionary approach (F_{pa},F_{lim})	⊖	⊕	⊕

SSB (Spawning Stock Biomass)	2008	2009	2010
MSY ($B_{trigger}$)	⊕	⊖	⊖
Precautionary approach (B_{pa},B_{lim})	⊕	o	o

SSB has fluctuated around the precautionary reference points for the last decade. Fishing mortality has shown a declining trend since 1995 and is estimated to be below F_{pa} in 2008 and 2009.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Less than 13 800 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 15 500 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	13 600 t

ICES has developed a generic approach to evaluate whether new survey information that becomes available in September forms a basis to update the advice. If this is the case, ICES will publish new advice in November 2010.

MSY approach: Following the ICES MSY framework based on a Ricker stock-recruit relationship implies fishing mortality to be reduced to 0.22 (because SSB 2011 > MSY $B_{trigger}$), resulting in landings of less than 9.650.t in 2011. This is expected to lead to an SSB of 40 500 t in 2012.

Following the transition scheme towards the ICES MSY framework implies fishing mortality to be reduced to ((0.36*0.8) + (0.22 *0.2)) = 0.33 (higher than F_{msy}), resulting in landings of less than13 800 t in 2011. This is expected to lead to an SSB of 36 600 t in 2012

PA approach: F could be increased by up to 6% and SSB would likely be above B_{pa} in 2012. This corresponds to landings of less than 15 500 t in 2011.

Management plan: Following the EU management plan implies a 10% reduction of F (TAC of 13 600 t in 2011, implying a 10% reduction in fishing effort), this is expected to lead to an SSB of 36 900 t in 2012. This leads to a TAC reduction of 4%, being within the 15% bounds of the management plan TAC change constraints.

ICES further notes that

- Sole are mainly caught in a mixed beam trawl fishery with plaice and other flatfish using 80-mm mesh in the southern North Sea. The minimum mesh size in the mixed beam trawl fishery in the southern North Sea means that large numbers of undersized plaice and cod are discarded. Measures to reduce discarding in the mixed beam trawl fishery would greatly benefit these stocks. An increase in the minimum landing size of sole could provide an incentive to fish with larger mesh sizes and would therefore mean a reduction in the discarding of plaice. The minimum landing size of North Sea sole is 24 cm. An increased mesh size in the fishery would reduce the catch of undersized plaice and cod, but would also result in short-term loss of marketable sole.
- The peaks in the historical time-series of SSB of North Sea sole correspond with the occasional occurrence of strong year-classes. Due to a high fishing mortality the SSB has declined during the nineties. The fishery opportunities and SSB are now dependent on incoming year-classes and can therefore fluctuate considerably between years. The SSB and landings in recent years have been dominated by the 2001 and 2005 year-classes. The predicted SSB in 2010 is largely dependent on the above-average recruitment of the 2005 year-class.

STECF COMMENTS:

STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that sole in Division IV falls under Category 4. STECF notes that in accordance with the multi-annual management plan landings in 2011 should be 13 600 t. (This figure is calculated on the basis of a 10% reduction of F in 2011 compared to F in 2010, being within the 15% bounds of the management plan TAC change constraints).

STECF notes that the value for F_{msy} for sole in the North Sea is provisional and may be subject to revision pending the outcome of further investigations by ICES in the summer of 2010.

STECF notes that the advice for sole in Divisions IV for 2011 may be subject to change pending the results of a potential re-assessment in the light of additional new data from surveys undertaken in the summer of 2010. Any such change in the advice will be incorporated in the Consolidated STECF review of advice for 2011, which will be published in November 2010.

1.21. Sole (*Solea solea*) in Division VIId (Eastern English Channel)

FISHERIES: The main fleets, fishing for sole in Division VIId, are Belgian and English offshore beam trawlers (> 300 HP), which also take plaice as a by-catch. These fleets also operate in other management areas. French offshore trawlers targeting roundfish also take sole as a by-catch. Also numerous inshore < 10 m boats on the English and French coasts target sole in the spring and autumn mainly using fixed nets. Between 1986–1997,

the total landings have been fluctuating around 4,500t. In 1998 the lowest landings were observed (3,400t), since 2000 the landings have increased to 5,000t in 2003 and fluctuated around that high value for the next 7 years. Landings in 2008 are slightly lower at 4,500 tonnes. The landings for 2009 are incomplete.It should be noted that although sometimes official landings were declared according agreed TAC's, it is apparent that since 1997 the uptake was always lower than the TAC.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Although corrected for, the analytical assessments, using catch-at-age and CPUE data from commercial fleets and surveys are considered uncertain due to under-reporting from the inshore fleet and mis-reporting by beam trawlers.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	8000 t	Bpa
	F_{msy}	0.29	Stochastic simulations assuming smooth hockey stick relationship
Precautionary approach	B_{lim}	Not defined	Poor biological basis for definition
	B_{pa}	8000 t	This is the lowest observed biomass at which there is no indication of impaired recruitment. Smoothed B_{loss}
	F_{lim}	0.55	F_{loss}, but poorly defined; analogy to North Sea and setting of 1.4 F_{pa} = 0.55. This is a fishing mortality at or above which the stock has shown continued decline.
	F_{pa}	0.4	Between F_{med} and 5th percentile of F_{loss}; SSB>B_{pa} and probability (SSB_{mt}<B_{pa}), 10%: 0.4.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	⊖	⊖	⊖
Precautionary approach (F_{pa},F_{lim})	o	o	o

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	⊕	⊕	⊕
Precautionary approach (B_{pa},B_{lim})	⊕	⊕	⊕

The spawning-stock biomass has been fluctuating around a mean of about 10 000 t since 1982, and has been above B_{pa} since 2002. Fishing mortality has increased and fluctuated between F_{pa} and F_{lim} the last 4 years. The 2001, 2004 and 2005 year classes were the three highest since 1990. The 2008 year class is predicted to be the highest in the time-series.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Less than 4840 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 4840 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

MSY approach: Following the ICES MSY framework implies fishing mortality to be reduced to 0.29 resulting in landings of less than 3690 t in 2011. This is expected to lead to a record high SSB of 14 200 t in 2012

Following the transition scheme towards the ICES MSY framework implies that (0.8*F(2010) + 0.2*F_{msy}) is 0.44, which is above F_{pa}.Therefore, fishing mortality should be reduced to 0.4 (= F_{pa}), resulting in landings of less than 4840 t in 2011. This is expected to lead to an SSB of 12 900 t in 2012.

PA approach: The fishing mortality in 2011 should be no more than F_{pa} corresponding to landings of less than 4840 t in 2011. This is expected to keep SSB above B_{pa} in 2012.

Policy paper: In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 3 because the stock is outside safe biological limits. The resulting TAC is derived from a 30% reduction from the assumed fishing mortality in 2010. The resulting TAC would be 4 156 t

STECF COMMENTS:

STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that sole in Division VIId falls under Category 3. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 4 156 t (the basis for this figure is a 30% reduction in fishing mortality in 2011 compared to 2010).

STECF notes that the 80mm mesh size in the mixed beam trawl fishery is not matched to the minimum landing size of plaice. Measures to reduce plaice discarding in the sole fishery would greatly benefit the plaice stock and future yields Mesh enlargement would reduce the catch of undersized plaice, but would also result in short-term loss of marketable sole. Furthermore, an increase in the minimum landing size of sole could provide an incentive to fish with larger mesh sizes and therefore mean a reduction in the discarding of plaice.

1.22. Turbot (*Psetta maxima*) in the North Sea

ICES has not assessed this stock and STECF has no access to any stock assessment information on turbot in this area.

A precautionary TAC (including brill) in areas IIa and IV for 2010 was set to 4 739 t.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Turbot in the North Sea falls under Category 11. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 imply a TAC in 2011 of 4 127 t which is the average of recent catches (2007-2008-2009) and falls within the 15% TAC constraint.

1.23. Witch (*Glyptocephalus cynoglossus*) in the North Sea

ICES has not assessed this stock and STECF has no access to any stock assessment information on turbot in this area.

A precautionary TAC (including lemon sole) in areas IIa and IV for 2010 was set to 6 521 t.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Witch in the North Sea falls under Category 11. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 5 543 t which is the average of recent catches (2007-2008-2009) with a 15% TAC constraint.

1.24. Norway pout (*Trisopterus esmarki*) in IIa, IIIa and the North Sea

FISHERIES: The fishery is mainly by Danish and Norwegian vessels using small mesh trawls in the northern North Sea.

The stock is managed by TACs. Landings fluctuated between 110,000 and 735,000 t. in the period 1971-1997, and apart from 2000 (184,000 t) decreased substantially in the following years The fishery was closed in 2005, reopened in 2006 and closed again in 2007. Landings in 2008 and 2009 were 36,100 t and 54,500 t respectively.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The analytical seasonal XSA assessment model fitted for this stock is based on time-series of catch-at-age, four quarterly commercial cpue series, and four research survey series.

The stock is assessed twice a year. The spring assessment provides stock status up to 1st of April of the current year. The autumn assessment provides stock status for the current year and a forecast of fishing possibilities in the next year. A benchmark assessment is suggested for 2012.

MANAGEMENT OBJECTIVES: No management objectives have been set for this stock. Due to the short-lived nature of this species a preliminary TAC is set every year, which is updated on the basis of in year advice.

ICES has evaluated and commented on three management strategies, following requests from managers – fixed fishing mortality (0.35), fixed TAC (50 000 t), and a variable TAC escapement strategy. The evaluation shows that all three management strategies are capable of generating stock trends that stay away from B_{lim} with a high probability in the long-term and are therefore considered to be in accordance with the precautionary approach.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{escapement}$	150 000 t	= B_{pa}
	F_{msy}	Undefined	None advised
Precautionary approach	B_{lim}	90 000 t	B_{lim} = B_{loss}, the lowest observed biomass in the 1980s
	B_{pa}	150 000 t	= B_{lim} $e^{0.3*1.65}$
	F_{lim}	Undefined	None advised
	F_{pa}	Undefined	None advised

STOCK STATUS:

F (Fishing Mortality)			
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

SSB (Spawning Stock Biomass)			
	2008	2009	**2010**
MSY ($B_{trigger}$)	−	+	+
Precautionary approach (B_{pa},B_{lim})	o	+	+

RECENT MANAGEMENT ADVICE:

Advice for 2010 (in-year advice)

Management Objective (s)	**Landings in 2010**
MSY approach with caution at low stock size	Less than 434 000 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 434 000 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

MSY approach

With the objective to maintain the spawning stock biomass above a reference level of MSY $B_{escapement}$ by 1st of January 2011 then a catch of less than 434,000 t can be taken in 2010. This implies that fishing mortality does not need to be reduced.

PA approach
This is the same as the MSY approach

Policy paper
In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 5 since this is a short lived species. The resulting TAC for 2010 would be 434,000 t. ICES has not evaluated this policy paper.

STECF COMMENTS:

STECF agrees with the ICES assessment of the state of the stock and the advice for 2010.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Norway pout in Divisions IIa, IIIa and Subarea IV falls under Category 5. Accordingly STECF notes that the rules specify that a provisional TAC is set and will be changed when new information is available during the year. STECF advises that with the objective to maintain the spawning stock biomass above a reference level of MSY $B_{escapement}$ by 1st of January 2011 then catches in 2010 should be less than 434,000 t.

1.25. Sandeel (*Ammodytidae*) in the Skagerrak and Kattegat (IIIa)

The stock summary and advice for Sandeel in IIIa are given together with Sandeel in Subarea IV in Section 1.26.

1.26. Sandeel (*Ammodytidae*) in the North Sea (IV), Skagerrak and Kattegat (IIIa)

The stock summary for sandeel in the North Sea (IV), Skagerrak and Kattegat (IIIa) is based on the ICES assessment presented in October 2009. It will be updated after the release of the ICES assessment in September 2010 and included in the consolidated STECF review of advice for 2011 for Stocks of Community interest.

Sandeel in the North Sea, the Skagerrak and the Kattegat includes five species. *Ammodytes marinus* is dominating in the North Sea while *Ammodytes tobianus* is relatively more abundant in the Skagerrak and the Kattegat. ICES therefore assess sandeel in the area as three separate stocks, two for the North Sea (Shetland and North Sea excluding the Shetlands) and one for the Skagerrak and the Kattegat. No analytical assessment is available for sandeel in the Skagerrak and the Kattegat.

FISHERIES: Sandeel is taken by trawl with codend mesh sizes of less than 16 mm. The fishery is seasonal, taking place from April to July. By-catch of other species is low. Sandeels are largely stationary after settlement and the sandeel must be considered as a complex of local populations.

The stocks are exploited predominantly by Denmark and Norway, with minor landings taken by the UK, Sweden, Germany and the Faroes. Landings fluctuated between 550,000 and 1,140,000 t in the period 1980 to 2002 with the highest catches observed in 1997. Catches dropped in 2003 and have since then been well below average reaching a minimum of 172,000 t in 2005. Catches in 2009 amount to 335,200 t. Catch possibilities are largely dependent on the size of the recruiting year-class.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. ICES assesses the North Sea and the Skagerrak/Kattegat sandeel as two separate stocks. No assessment is available for snadeel in the Skagerrak and Kattegat. The assessment of the North Sea sandeel is based on a seasonal age-based assessment using commercial CPUE data.

MANAGEMENT OBJECTIVES: No management objectives have been set for this stock. Two management systems are in operation for the sandeel in the North Sea, Skagerrak and Kattegat. The EU management system covers the sandeel fisheries in EU waters and the Norwegian the fisheries in Norwegian waters.

Due to the short-lived nature of sandeel a preliminary TAC for sandeel in EU waters is set every year, which is updated on the basis of in-year advice.

REFERENCE POINTS: The proposed precautionary biomass reference point for the North Sea stock is B_{pa} = 600,000t. No precautionary fishing mortality reference point has been proposed. No reference point has been defined for the sandeel in the Skagerrak and the Kattegat.

STOCK STATUS: According to the most recent estimate of SSB (2009), ICES classifies the stock as being at risk of reduced reproductive capacity. Fishing mortality decreased between 2001 and 2007 and increased in 2008 and 2009, but the present absolute level is uncertain. In the absence of an F reference point, the state of the stock cannot be evaluated with regard to sustainable harvest.

RECENT MANAGEMENT ADVICE:

ICES advises in October 2009 on the basis of exploitation boundaries in relation to precautionary limits that fishing grounds that are known to be commercially depleted should be closed to fishing while at non-depleted fishing grounds fishing should only be allowed in 2010 if analysis of real-time monitoring indicates that the stock can be rebuilt to B_{pa} by 2011

ICES recommends that fishing grounds that are known to be commercially depleted should be closed to fishing until there is evidence from monitoring programs that local populations have recovered. On other fishing grounds, a fishery should only be allowed in 2009 if analysis of monitoring indicates that the stock can be rebuilt to B_{pa} by 2010.

The EU fixed a preliminary TAC of 200,000 t for sandeel to be fished in EU waters of ICES divisions IIa, IIIa and subarea IV in 2010. The preliminary TAC was be revised by the Commission based on advice from ICES and the STECF on the size of the 2009 year class of North Sea sandeel applying the following harvest control rule:

$TAC_{2010} = -333+R1_{2010}*3,692$
where $R1_{2010}$ is the number of age 1 sandeel in billions on 1st January 2010.

If the TAC calculated using the harvest control rule exceeds 400,000 t, the TAC shall be set at 400,000 t.

ICES advised in May 2010 that on the basis of the experimental fishery for sandeel from 1 April - 6 May, the size of the 2009 year class is 159 billion individuals at age 1. This would give applying the harvest control rule agreed by the EU a TAC of 253,000 t for 2010.

STECF COMMENTS:

STECF presented a detailed review of ICES in-year advice for 2010 in May 2010 (Request on in-year management advice for sandeel in the North Sea).

In its review of ICES advice STECF noted: "Given the unresolved uncertainty in the assessment results and the discrepancy in the year-class strength estimates using the different methods (weighted or unweighted tuning fleets), STECF is unable to provide a reliable estimate of the size of the 2009 year class. Consequently, an appropriate TAC for 2010 corresponding to the agreed harvest rule in Council Regulation (EC) 23/2010 ANNEX IID cannot be reliably calculated. However STECF considers that given the wide spatial distribution of the fishery and very high cpue of age 1 sandeel on all fishing grounds in 2010 including the northern grounds, the ICES estimate of the strength of the 2009 year-class of sandeel in the North Sea (159 billion) is likely be an underestimate. As a consequence the TAC for 2010 using the ICES estimate and the agreed harvest rule in Council Regulation (EC) 23/2010 ANNEX IID (253,000 t) may also be underestimated. STECF has no objective means to determine the magnitude of any potential underestimation of the strength of the 2010 year-class and is unable to provide objective advice on an appropriate TAC for North Sea sandeel for 2010."

STECF notes that based on the advice given by ICES and STECF the Commission fixed a TAC of 400,000 t of sandeel for 2010 to be fished in EU waters of Division IIa and the North Sea and an additional amount of 16,920 t to be fished in Division IIIa.

1.27. Sandeel (*Ammodytidae*) in the Shetland area

STECF did not have access to any assessment of advice for sandeel in the Shetland area.

1.28. Rays and skates in the North sea

Previous stock summaries and advice on skates and rays has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice at the level of the North Sea ecoregion. Furthermore, ICES has not issued any new advice since 2008. The stock summary and advice for rays and skates in the North Sea will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice for these stocks is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

1.29. Spurdog (*Squalus acanthias*) in the North Sea

Previous stock summaries and advice on spurdog has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice at the level of the North Sea ecoregion. Furthermore, ICES has not issued any new advice since 2008. The stock summary and advice for spurdog in the North Sea will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice for this stock is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

1.30. Other Demersal elasmobranches in the North Sea, Skagerrak and Eastern channel

Previous stock summaries and advice demersal elasmobranchs has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice at the level of the North Sea ecoregion. Furthermore, ICES has not issued any new advice since 2008. The stock summary and advice for demersal elasmobranchs in the North Sea, Skagerrak and easatern channel will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice for this stock is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

1.31. Herring (*Clupea harengus*) in the North Sea (Sub-area IV) including components of this stock in Divs. IIa, IIIa and VIId

Based on the distributions of the spawning grounds, larvae drift, nursery areas and migration of the adults, three main stock units of herring have been defined in the North Sea:

- Buchan herring. Spawn July to September in the Orkney Shetland area and off the Scottish east coast. Nursery areas are along the east coast of Scotland and the Skagerrak and Kattegat.
- Banks herring. Spawn August to September, off English east coast. Historically spawning also took place on the western edge of the Dogger Bank. Nursery areas are off the English east coast and Danish west coast.
- Downs herring. Spawn December to February in the southern North Sea and Eastern Channel. Nursery areas are off the English east coast, Dutch coast, Danish west coast and in the German Bight.

In addition to the three main stock units a number of small spring spawning units exist, spawning in coastal area in the eastern North Sea.

The stock complexity of herring in the North Sea is further complicated by the appearance in the north-eastern North Sea of herring belonging to herring populations spawning in the spring in the western Baltic, Skagerrak and Kattegat. Herring from these populations migrate into the North Sea in summer and autumn.

Although the three main North Sea herring stocks include summer, autumn and winter spawners they are often named autumn spawners to distinguish them from the spring spawning stocks.

FISHERIES: The North Sea autumn spawning herring is exploited by Belgium, Denmark, France, Faroe Islands, Germany, Netherlands, Norway, Sweden, and UK. Four main fisheries exploit the stock:

- Fleet A: Directed herring fisheries with purse-seiners and trawlers (32 mm minimum mesh size) in the North Sea and eastern Channel.
- Fleet B: Herring taken as by-catch in the small-mesh fisheries in the North Sea under EU regulations (mesh size less than 32 mm).
- Fleet C: Directed herring fisheries in Skagerrak and Kattegat with purse-seiners and trawlers (32 mm minimum mesh size).
- Fleet D: By-catches of herring caught in the small-mesh fisheries (mesh size less than 32 mm) in Skagerrak and Kattegat.

At present, the fishery on the stock is managed by five separate TACs in three different management areas (Skagerrak and Kattegat, Northern and Central North Sea, and Southern North Sea and Eastern Channel) through joint arrangements by EU and Norway. For both the North Sea and the Skagerrak and Kattegat two separate TAC's are set, one for each of the four fleets.

Most catch data reported by ICES were official landings, but for some nations catch estimates were corrected by ICES for unallocated and misreported catch. Discard data are either incomplete or entirely missing. ICES catch includes unallocated and misreported landings, discards and slipping. Denmark and Norway provided information on by-catches of herring in the industrial fishery. The catch estimate for the North Sea and eastern Channel in 2009 by ICES amounts to 165,800 t including available estimates of discards. This represents an underutilisation of the 2009 total TAC (187,000 t) of 11%. In 2008 the total catches exceeded the TACs by 11%. The change is mainly caused by a reduction in unallocated catches from around 17,000 t in 2008 to less than 1,000 t in 2009.

SOURCE OF MANAGEMENT ADVICE: The main advisory body is ICES. The age-based assessment is based on landings from Subarea IV and Division IIIa and VIId and on four survey time series (Acoustic 1–9+ ring index, IBTS age 1–5+, 0-group and larvae SSB indices).

REFERENCE POINTS:

	Type	Value	Technical basis
MSY Approach	MSY $B_{trigger}$	1.3 million t	Provisionally Bpa. The management rule suggest levels between 0.8 – 1.5 mt based on combination of simulations and stakeholder agreement
	F_{msy}	0.25	Simulations under different productivity regimes, research between 1996 and 2008. (see WKHMP, ICES CM 2008 (ACOM:27)
Precautionary approach	B_{lim}	800 000 t	< 0.8 million t; poor recruitment has been experienced
	B_{pa}	1.3 million t	B trigger in the previous harvest control rule
	F_{lim}	not defined	
	F_{pa}	$F_{0\text{-}1} = 0.12$ $F_{2\text{-}6} = 0.25$	Target Fs in the harvest control rule

STOCK STATUS:

F (Fishing Mortality)			
	2007	2008	2009
MSY (F_{msy})	⊖	⊕	⊕
Precautionary	⊖	⊕	⊕

approach (F_{pa},F_{lim})			
	SSB (Spawning Stock Biomass)		
	2008	2009	2010
MSY ($B_{trigger}$)	⛔	⛔	⛔
Precautionary approach (B_{pa},B_{lim})	⚠	⚠	⚠

MANAGEMENT AGREEMENTS:

In November 2008 EU-Norway have agreed on an adjusted management plan taking account of recent poor recruitment. The elements of the plan are as follows:

1. *1. Every effort shall be made to maintain a minimum level of Spawning Stock Biomass (SSB) greater than 800,000 tonnes (Blim).*
2. *2. Where the SSB is estimated to be above 1.5 million tonnes the Parties agree to set quotas for the directed fishery and for by-catches in other fisheries, reflecting a fishing mortality rate of no more than 0.25 for 2 ringers and older and no more than 0.05 for 0 - 1 ringers.*
3. *3. Where the SSB is estimated to be below 1.5 million tonnes but above 800,000 tonnes, the Parties agree to set quotas for the direct fishery and for by-catches in other fisheries, reflecting a fishing mortality rate on 2 ringers and older equal to:*
4.
    5. *0.25-(0.15*(1,500,000-SSB)/700,000) for 2 ringers and older,*
    6. *and no more than 0.05 for 0 - 1 ringers*
    7.
8. *4. Where the SSB is estimated to be below 800,000 tonnes the Parties agree to set quotas for the directed fishery and for by-catches in other fisheries, reflecting a fishing mortality rate of less than 0.1 for 2 ringers and older and of less than 0.04 for 0-1 ringers.*
9. *5. Where the rules in paragraphs 2 and 3 would lead to a TAC which deviates by more than 15 % from the TAC of the preceding year the parties shall fix a TAC that is no more than 15 % greater or 15 % less than the TAC of the preceding year.*
10. *6. Notwithstanding paragraph 5 the Parties may, where considered appropriate, reduce the TAC by more than 15 % compared to the TAC of the preceding year.*
11. *7. By-catches of herring may only be landed in ports where adequate sampling schemes to effectively monitor the landings have been set up. All catches landed shall be deducted from the respective quotas set, and the fisheries shall be stopped immediately in the event that the quotas are exhausted.*
12. *8. The allocation of the TAC for the directed fishery for herring shall be 29 % to Norway and 71 % to the Community. The by-catch quota for herring shall be allocated to the Community.*
13. *9. A review of this arrangement shall take place no later than 31 December 2011.*
14. *10. This arrangement enters into force on 1 January 2009.*

ICES has evaluated this management plan (WKHMP ICES CM 2008 ACOM:27) and concluded that the plan is consistent with the precautionary approach.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
MSY approach with caution at low stock size	Less than 371,200 t A fleet
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 371,200 t A fleet
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	188,900 t A fleet

MSY approach

Following the ICES MSY framework implies fishing mortality to be raised to 0.25, resulting in catch of less than 370 kt in 2011. This is expected to lead to an SSB of 1.34 million tonnes in 2012

PA approach
The fishing mortality in 2011 should be no more than F_{pa} corresponding to catches of less than 370 kt in 2011. The SSB is expected to remain above B_{pa} in 2012.

Management plan
The agreed management plan between EU and Norway works on the following boundaries:

Value	Technical basis
$F_{0-1} = 0.05$ $F_{2-6} = 0.25$	If SSB >1.5 million tonnes, B trigger (based on simulations)
$F_{0-1} = 0.05$ $F_{2-6} = 0.25 - (0.15*(1500000-SSB)/700000)$	If SSB between 0.8 and 1.5 million tonnes (based on simulations)
$F_{0-1} = 0.04$ $F_{2-6} = 0.10$	If SSB <0.8 million t (based on simulations)

ICES has evaluated this management plan and concluded that the plan is consistent with the precautionary approach.

Following the agreed management plan between EU and Norway implies imposing the maximium 15% increase in TAC which results in a TAC of 190 kt for the A fleet in 2011. The projected SSB in 2011 is between 0.8 and 1.5 million tonnes, and the unrestricted target F for 2011 is calculated to be 0.23 which would lead to a TAC increase of 106% (option B).

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that herring in the North Sea falls under Category 4. STECF notes that in accordance with the multi-annual management plan landings in 2011 should be 188,945 t for the A fleet and 16,200 t for the B fleet.
STECF notes that the management plan has apparently delivered on the objective of controlling fishing mortality and that adherence to the provisions of the plan is likely to result in maintaining the stock above B trigger.

Special request on TAC for North Sea herring for 2011

BACKGROUND AND TERMS OF REFERENCE
According to information made available by the Pelagic RAC to the Commission, it appears that during the 2010 ICES Herring Assessment Working Group (HAWG) a comparison between 2009 and 2010 estimations of the Spawning Stock Biomass (SSB) and the fishing mortality (F) showed substantial differences, what has resulted in the SSB being re-estimated to 1,29 million tonnes - from the original estimate of less than 1 million tonnes - and the realised fishing mortality being estimated to 0,11.

When reviewing advice released by ICES and if such an information is to be confirmed, STECF is requested to indicate what the 2010 TAC would have been by applying agreed HCRs corresponding to the reviewed status of the stock.

STECFs RESPONSE
The comparison between the 2009 and 2010 estimates of fishing mortality and spawning stock biomass made by the 2010 ICES Herring Assessment Working Group (HAWG) is shown below. HAWG assumed in 2009 that catches by fleet A in 2009 would exceed the TAC by 13%. This appeared not to happen. In addition, the 2006 year class is now estimated by ICES to be 75% greater in abundance than estimated in 2009. These two factors, plus increased size at age, have an effect on the estimates of SSB resulting in an upward revision of 316 kt SSB compared to the projected estimate from 2009.

	2009 ASSESSMENT				2010 ASSESSMENT				PERCENTAGE CHANGE IN ESTIMATE 2009-2010			
Year	Rec	SSB	Catch	F_{2-6}	Rec	SSB	Catch	F_{2-6}	Rec	SSB	Catch	F_{2-6}
2007	19044	953	NA	0.33	30374	1047	406	0.31	-59%	-10%	NA	6%
2008	22909	1000	NA	0.23	16409	1038	258	0.22	28%	-4%	NA	4%
2009*	31163	971	211	0.19	29750	1289	168	0.111	5%	-32%	20%	42%

*** projected values from the intermediate year in the deterministic short term projection, assuming catch constraint with small overshoot. (Recruits are defined as age 0)**

Using the 2010 assessment of the spawning stock size in the HCR would imply that the TAC for fleet A should reflect a fishing mortality of 0.20 (age 2 to 6), resulting in catches by fleet A of 262,000 t in 2010. This represents an increase in the TAC from 2009 to 2010 by more than 15% and the 2010 TAC for fleet A should be limited to 196,650 t. The agreed 2010 TAC for fleet A is 163,400 t.

The corresponding 2010 TAC for fleet B using the 2010 assessment, a fishing mortality on age 0 and 1 of 0.05 (management plan) and assuming that the catches of North Sea autumn spawning herring in Division IIIa would remain unchanged should be limited to no more than 14,385 t. The agreed TAC is 13,587 t.

A possible revision of the 2010 TACs may affect the TACs for 2011 and STECF advises that if the TACs for 2010 are revised as outlined above and following the agreed management plan between EU and Norway the 2011 TAC for the A fleet should be 226,148 t (15 % increase).

1.32. Herring (*Clupea harengus*) in Divisions IVc and VIId (Downs spring-spawning herring)

FISHERIES: The Downs herring constitutes one of the three main stock units forming the North Sea autumn spawning herring stock and is included in Section 1.31.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Assessment has only been made on the combined North Sea stock based on analysis of catch at age data calibrated with survey data. No separate assessment has recently been made for the Downs component of the stock.

REFERENCE POINTS: No reference points have been defined for Downs herring. The reference points for North Sea autumn spawning herring are given in section 1.31.

STOCK STATUS: The stock has returned to its pre-collapsed state and is now again a major component of the stock.

RECENT MANAGEMENT ADVICE: See Section 1.31 on herring in the North Sea and adjacent areas. The sub-TAC for Divisions IVc and VIId was established for the conservation of the spawning aggregation of Downs herring. The Downs herring has returned to its pre-collapsed state and is now again a major component of the stock. It is probable that exploitation of Downs herring has been relatively high. In the absence of data to the contrary ICES proposes that a share of 11% of the total North Sea TAC (average share 1989–2002) would still be appropriate for Downs herring.

STECF COMMENTS: STECF agrees with the ICES advice.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that herring in Divisions IVc and VIId falls under Category 4.STECF notes that in accordance with the ICES advice, the TAC for IVc and VIId should be equal to 11% of the TAC for fleet A which under the agreed management plan corresponds to 20,746 t.

1.33. Horse mackerel (*Trachurus trachurus*) in the North Sea (Divisions IIIa eastern part, IVbc, VIId).

The stock summary and advice for Horse mackerel (Trachurus trachurus) in the North Sea (Divisions IIIa eastern part, IVbc, VIId) will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice on this stock is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

1.34. Mackerel (*Scomber scombrus*) - combined Southern, Western and North Sea spawning components)

The stock summary and advice for mackerel in in the North Sea is given in Section 5.6 (Combined Southern, Western and North Sea spawning components).

1.35. Sprat (*Sprattus sprattus*) in ICES Division IIIa

FISHERIES: The fisheries in IIIa are carried out by Denmark and Sweden using trawlers and along the Swedish coast by small purse seiners. Catches of sprat in Division IIIa averaged about 70,000 t in the 1970s, but since 1982 have typically been below 20,000 t. ICES estimates the catch in 2009 to be 9,000 t. The directed human consumption sprat fishery serves a very small market while most sprat catches are taken in an industrial fishery, where catches are limited by herring by-catch restrictions. This combination of factors has prevented full utilisation of the occasional strong year-classes (which, in general, emerge and disappear very quickly).

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

REFERENCE POINTS: No reference points have been proposed for sprat in Division IIIa.

STOCK STATUS: The available information is inadequate to evaluate stock trends and therefore the state of the stock is unknown. Sprat in this area is short-lived with large annual natural fluctuations in stock biomass.

MANAGEMENT OBJECTIVES: There are no explicit management objectives for this stock. ICES considers that sprat cannot be fished without by-catches of herring except in years with high sprat abundance or low herring recruitment. As sprat in Division IIIa is mainly fished together with juvenile herring, the exploitation of sprat is limited by the restrictions imposed on fisheries for juvenile herring.

RECENT MANAGEMENT ADVICE: ICES gives no advice for this stock.

STECF COMMEMTS: STECF agrees with the ICES assessment that the state of the stock is unknown.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that sprat in Division IIIa falls under Category 5. Accordingly STECF notes that the rules for the above category imply that a provisional TAC be set.

1.36. Sprat (Sprattus sprattus) in the North Sea (Subarea IV)

FISHERIES: Denmark, Norway and UK exploit the sprat in this area. The fishery is carried out using trawlers and purse seiners. There are considerable fluctuations in total landings, from a peak in 1975 of 641,000 t to a low in 1986 of around 20,000 t.. In the last 10 years landings have been at or below 200,000 t. Estimated total landings in 2008 and 2009 were around 61,000 t and 133,000 t respectively.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based on indicators derived from three research vessel surveys.

MANAGEMENT OBJECTIVES: There are no explicit management objectives for this stock

REFERENCE POINTS: No reference points have been defined for this stock.

STOCK STATUS: The state of the stock is unknown.

RECENT MANAGEMENT ADVICE: ICES gives no advice for this stock. ICES notes that the sprat stock in the North Sea is short-lived and the catch is dominated by young fish. The stock size is mostly driven by the recruiting year class. Thus, the fishery in a given year is dependent on that year's incoming year class.

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF considers that because sprat is a short-lived species it should be assigned to category 5. Accordingly STECF notes that the rules for category 5 prescribe that a provisional TAC is set and will be changed when new information is available during the year.

However, because STECF is unable to provide specific advice for management, sprat in the North Sea may also be is classified under Category 11. STECF notes that the rules for category 11 prescribe that TACs should be adjusted towards recent real catch levels but should not be changed by more than 15% per year or Member States should develop an implementation plan to provide advice within a short time. Furthermore, where appropriate, there should be no increase in fishing effort. STECF notes that the recent catch levels (average 2007-2009) were 92,667 t. Adjusting the 2011 TAC in line with recent catch levels would represent a 45% change on the 2010 TAC. STECF therefore notes that the rules for category 11 prescribe a TAC for sprat in the North Sea in 2011 of 144,500 t, representing a 15% decrease on the 2010 TAC.

2. Resources West of Scotland and West of Ireland

2.1. Norway lobster (*Nephrops norvegicus*) in ICES Div. Vb and Sub-area VI, (West of Scotland) and waters w of Ireland

There are no exploited *Nephrops* stocks in Div. Vb. In Sub-area VI and Divs. VIIb & VIIc (waters west of Ireland) the following functional units are considered by ICES:

FU no.	Name	ICES Divisions	Statistical rectangles
11	North Minch	VIa	44–46 E3-E4
12	South Minch	VIa	41–43 E2-E4
13	Clyde	VIa	39–40 E4-E5
16	Porcupine Bank	VIIc	31–36 D5–D6; 32–35 D7–D8
17	Aran Grounds	VIIb	34–35 D9–E0

Nephrops also occur in other areas not contained within the Functional Units. TV surveys in deep water suggest widespread distribution at low density, and surveys at Stanton Bank indicate a population there. Three *Nephrops* stocks (FUs) in Sub-area VI and one in Div. VIIb (FU 17) are currently assessed from UWTV surveys. On basis of these, current stock abundance and harvest ratios are estimated.

MSY approach

There are no precautionary reference points defined for *Nephrops*. Under the new ICES MSY framework, exploitation rates which are likely to generate high long-term yield (and low probability of stock overfishing) have been explored and proposed for each functional unit. Owing to the way *Nephrops* are assessed, it is not possible to estimate F_{msy} directly and hence proxies for F_{msy} are determined. Three candidates for F_{msy} are $F_{0.1}$,

$F_{35\%SpR}$ and F_{max}. There may be strong difference in relative exploitation rates between the sexes in many stocks. To account for this values for each of the candidates have been determined for males, females and the two sexes combined. The appropriate F_{msy} candidate has been selected for each Functional Unit independently according to the perception of stock resilience, factors affecting recruitment, population density, knowledge of biological parameters and the nature of the fishery (relative exploitation of the sexes and historical Harvest Rate vs. stock status).

A decision making framework based on the table below was used in the selection of preliminary stock specific F_{msy} proxies. These may be modified following further data exploration and analysis. The combined sex F_{msy} proxy should be considered appropriate provided that the resulting percentage of virgin spawner per-recruit for males or females does not fall below 20%. In such a case a more conservative sex specific F_{msy} proxy should be picked over the combined proxy.

		Burrow Density (average numbers/m2)		
		Low <0.3	Med 0.3-0.8	High >0.8
Observed larvest rate or landings compared to stock status	>Fmax	F35%	Fmax	Fmax
	Fmax-F0.1	F0.1	F35%	Fmax
	<F0.1	F0.1	F0.1	F35%
	Unknown	F0.1	F35	F35%
Stock Size Estimates	Variable	F0.1	F0.1	F35%
	Stable	F0.1	F35%	Fmax
Knowledge of biological parameters	Poor	F0.1	F0.1	F35%
	Good	F35%	F35%	Fmax
History Fishery	Stable spatially and temporally	F35%	F35%	Fmax
	Sporadic	F0.1	F0.1	F35%
	Developing	F0.1	F35%	F35%

STECF notes that to the West of Scotland (which comprises three *Nephrops* Functional Units (FUs)) the present aggregated management approach (overall TAC for all FUs) runs the risk of unbalanced effort distribution. Adoption of management initiatives to ensure that effort can be appropriately controlled in smaller areas within the overall TAC area (Vb & VI) is recommended. Furthermore, STECF notes that the current aggregated management of all *Nephrops* FUs in this area as a single unit is a major obstacle for a management complying with the Commissions Communication on Fishing opportunities for 2011 (COM(2010)241 final) as the application of Annexes III and IV require a TAC for each stock (in this case FU). To facilitate the provision of advice on landings for each FU consistent with Annexes III and IV of COM(2010) 241-FINAL, STECF has derived 'partial TAC's for each FU. These values have been derived by distributing the 2010 Vb/VI TAC across FUs in proportion to the recent average landings (07-09) from each FU. (see below).

STECF notes that there also are *Nephrops* catches in "other rectangles" in Division VIa, e.g. from offshore areas adjacent to Stanton Bank where Irish fishers frequently operate from the shelf edge. To provide some guidance on appropriate future landings for these areas, the use of an average landings figure of around 250 tonnes could be considered.

A summary of ICES advice and application of the Annex III & IV rules in COM(2010) 241-FINAL for the West of Scotland FUs is given below. It should be noted, however, that despite the provision of a West of Scotland total in this table, STECF still **recommends** that *Nephrops* FUs should be managed separately.

	FU11	FU12	FU13 F Clyde	FU13 Jura	Other	Total
Average landings (07-09)	3755	5022	5661		197	14634
FU 'Partial TAC' 2010	4120	5510	6211		217	16057[1]
STECF Advice	3100	4000	4100	520	250	11970[2]
Category	6	6	6		6	
Rule	IV.1	IV.1	IV.1		IV.4	
Derived FU 'partial TAC' 2011	3502	4683	5279[3]		217	13681

Landings in t.

[1)] 2010 TAC for Vb & VI

[2)] Sum of ICES advice

[3)] Rule applied to FU13 partial TAC on the basis of categorisation of Firth of Clyde component of this FU.

For FU 16 (: Porcupine Bank) and FU 17 (Aran Grounds) the similar approach to calculate partial TAC's is presented in section 3.1 which deals with the remainder of the sub-area VII FU's..

2.1.1. Norway lobster (*Nephrops norvegicus*) in North Minch (FU 11)

FISHERY: Total *Nephrops* landings increased in the recent years, from about 3,000 t in 2005 to around 3800 t in 2008. Landings in 2009 were 3497 t. Available information indicates that landings from the late 1990s up to 2005 are most likely to be an underestimate of actual landings, but the reliability of landings figures has improved since 2006 with the introduction of buyers and sellers legislation. The *Nephrops* trawl fishery in this area takes by-catches of other species, especially haddock and whiting, anglerfish. Creel fishing takes place mainly in the sea-loch areas of this FU accounting for 600-700 tonnes. Overall effort in creel numbers is not known.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based UWTV surveys of absolute abundance. Previous years' estimates of absolute estimate of abundance from UWTV were considered uncertain because of too high levels of unquantifiable bias. However at the ICES Benchmark Workshop on *Nephrops* in 2009 major sources of bias were quantified for each survey and an overall bias correction factor derived which, when applied to the estimates of abundance from the UWTV survey, allows them to be treated as absolute abundance levels.

REFERENCE POINTS:

	Type	***Value***	***Technical basis***
MSY Approach	MSY $B_{trigger}$	330 million individuals	Bias-adjusted lowest observed UWTV survey estimate of abundance
	F_{msy}	12.5% harvest rate	Equivalent to $F_{35\%SpR}$ combined sex in 2010
Precautionary Approach	Not defined		

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	⊖	⊖	⊖
Precautionary approach (F_{pa},F_{lim})	?	?	?

	UWTV abundance		
	2008	2009	**2010**
MSY ($B_{trigger}$)	⊕	⊕	⊕
Precautionary approach (B_{pa},B_{lim})	?	?	?

The evidence from the TV survey suggests that the population is stable over the last 3 years, but at a lower level than that evident from 2003–2006. The calculated harvest ratio in 2009 (dead removals/UWTV abundance) is above the values associated with high long term yield and low risk depletion.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Less than 3100 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

MSY approach

Following the ICES MSY framework implies the harvest ratio to be reduced to F_{msy} 12.5 %, resulting in landings of 1900 t in 2011.

Following the transition scheme towards the ICES MSY framework implies the harvest ratio should be reduced to 20.1% (0.8 x harvest ratio(F_{2010} 22%) + 0.2 x harvest ratio(F_{msy} 12.5%) resulting in landings of 3100 t in 2011.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 6 (Abundance has been stable in the last three years). Annex III rule 1 would apply as the stock is over fished with respect to F_{msy}. ICES notes that the TAC area and the stock assessment area do not match.

Additional considerations

The survey should be considered as a minimum estimate since VMS data (associated with landings of *Nephrops*) shows fishing outside the TV areas.

ICES advises on the basis of exploitation boundaries in relation to high long-term yield and low risk of depletion of production potential that the Harvest Rate for *Nephrops* fisheries should be less than $F_{0.1}$. This corresponds to landings less than 972 t for the North Minch stock.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that FU 11 *Nephrops* falls under Category 6. Accordingly STECF notes that the rule for the above category (Annex IV, rule 1) imply a TAC for FU 11 *Nephrops* in 2011 of 3502 t based on a 15% reduction of the 2010 partial TAC of 4120 t(See section 2.1).

2.1.2. Norway lobster (*Nephrops norvegicus*) in South Minch (FU 12)

FISHERY: Total *Nephrops* landings from this FU were above 5000 t in 2007 and 2008 bur decreased to around 4300 t in 2009. Available information indicates that landings from the late 1990s up to 2005 are most likely to be underestimates of actual landings. The reliability of landings figures improved from 2006 with the introduction of buyers and sellers legislation. The *Nephrops* trawl fishery in this area takes by-catches of other species, especially haddock, whiting, anglerfish and megrim. Larger vessels operating on the western limits of the ground generally take higher by-catches of fish. Creel fishing takes place mainly in the sea-loch areas of this FU accounting for around 900 tonnes. Overall effort in creel numbers is not known.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based UWTV surveys of absolute abundance. Previous years' estimates of absolute estimate of abundance from UWTV were considered uncertain because of too high levels of unquantifiable bias. However at the ICES

Benchmark Workshop on *Nephrops* in 2009 major sources of bias were quantified for each survey and an overall bias correction factor derived which, when applied to the estimates of abundance from the UWTV survey, allows them to be treated as absolute abundance levels.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	1016 million individuals	Bias-adjusted lowest observed UWTV survey estimate of abundance
	F_{msy}	12.3% harvest rate	Equivalent to $F_{35\%SpR}$ combined sex in 2010
Precautionary Approach	Not defined		

STOCK STATUS:

F (Fishing Mortality)			
	2007	2008	**2009**
MSY (F_{msy})	⊖	⊖	⊖
Precautionary approach (F_{pa},F_{lim})	?	?	?

UWTV abundance			
	2008	2009	**2010**
MSY ($B_{trigger}$)	⊕	⊕	⊕
Precautionary approach (B_{pa},B_{lim})	?	?	?

The stable mean sizes in the length compositions of catches (of individuals >35 mm CL) and recent fall in estimated harvest ratios (dead removals/TV abundance) to the equivalent of the F_{msy} proxy suggests that the stock is now being exploited sustainably.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Less than 4000 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

MSY approach

Following the ICES MSY framework implies the harvest ratio to be reduced to 12.3 %, resulting in landings of 3800 t in 2011. Following the transition scheme towards the ICES MSY framework implies the harvest ratio should be reduced to 12.9% (0.8 x harvest ratio(F2010 13.0%) + 0.2 x harvest ratio(Fmsy 12.3%) resulting in landings of 4000 t in 2011.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 6 (Abundance has been stable in the last three years). Annex III rule 2 would apply as the stock is not over fished with respect to Fmsy. ICES notes that the TAC area and the stock assessment area do not match.

Additional considerations

The survey should be considered as a minimum estimate since VMS data (associated with landings of *Nephrops*) shows fishing outside the TV areas.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that FU 12 *Nephrops* falls under Category 6. Accordingly STECF notes that the rules for the above category (Annex IV, rule 1) imply a TAC for FU 12 *Nephrops* in 2011 of 4,683 t based on a 15% reduction of the 2010 partial TAC of 5510 t(See section 2.1).

2.1.3. Norway lobster (*Nephrops norvegicus*) in Firth of Clyde (FU 13), including Sound of Jura.

FISHERY: Total *Nephrops* landings increased in the recent years, from around 3,400 t in 2005 to around 6000 t in 2007, but landings decreased to 4405 t in 2009. Available information indicates that landings from the late 1990s up to 2005 most likely are underestimates of actual landings, but the reliability of landings figures has improved from 2006 with the introduction of buyers and sellers legislation. The *Nephrops* trawl fishery in this area takes by-catches of other species, mainly haddock, whiting and some cod. Creel fishing takes place in parts of this FU accounting for about 200 tonnes. Overall effort in creel numbers is not known.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based UWTV surveys of absolute abundance. Previous years' estimates of absolute estimate of abundance from UWTV were considered uncertain because of too high levels of unquantifiable bias. However at the ICES Benchmark Workshop on *Nephrops* in 2009 major sources of bias were quantified for each survey and an overall bias correction factor derived which, when applied to the estimates of abundance from the UWTV survey, allows them to be treated as absolute abundance levels.

REFERENCE POINTS:

Reference points – Firth of Clyde

	Type	***Value***	***Technical basis***
MSY Approach	MSY $B_{trigger}$	579 millions	Lowest observed abundance estimate
	F_{msy}	16.4% harvest rate	Equivalent to F_{max} combined sex in 2010
Precautionary Approach	Not defined		

Reference points – Sound of Jura

	Type	***Value***	***Technical basis***
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	14.5% harvest rate	Equivalent to $F_{35\%SpR}$ combined sex in 2010
Precautionary Approach	Not defined		

Harvest ratio reference points (2010):

	Male	Female	Combined
F_{max}	13.6 %	34.0 %	16.4 %
$F_{0.1}$	8.7 %	21.1 %	9.7 %
$F_{35SpR\%}$	10.7 %	25.7 %	14.5 %

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	⛔	⛔	⛔
Precautionary approach (F_{pa},F_{lim})	?	?	?

	UWTV abundance		
	2008	2009	2010
MSY ($B_{trigger}$)	⊕	⊕	⊕
Precautionary approach (B_{pa},B_{lim})	?	?	?

The table shows the status for the Firth of Clyde part of FU 13

Harvest rates for *Nephrops* in the Firth of Clyde have been at or above the proposed F_{msy} proxy in recent years. UWTV abundance remains well above the preliminary $B_{trigger}$.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	Landings in 2011
Transition to an **MSY approach** with caution at low stock size	Less than 4100 t for Firth of Clyde and less than 520 t for Sound of Jura
Cautiously avoid impaired recruitment (**Precautionary Approach**)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

Management of *Nephrops* should be implemented at the Functional Unit level. In this FU the two Subareas imply that additional controls maybe required to ensure that the landings taken in each Subarea are in line with the landings advice.

MSY approach

Following the ICES MSY framework implies the harvest ratio for the Firth of Clyde Subarea to be reduced to 16.4 %, resulting in landings of 2800 t in 2011. Following the ICES MSY framework implies the harvest ratio for the Sound of Jura Subarea to be 14.5 %, resulting in landings of 520 t in 2011.

Following the transition scheme towards the ICES MSY framework implies the harvest ratio for the Firth of Clyde should be reduced to 24.1% (0.8 x harvest ratio(F_{2010}) + 0.2 x harvest ratio(F_{msy})), resulting in landings of 4100 t in 2011. For the Sound of Jura no transition is needed as the harvest rate is already below the F_{msy} proxy.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) the two Subareas in this FU are classified under category 6 (Abundance has been stable in the last three years). Annex III rule 1 would apply for the Firth of Clyde as the stock is over fished with respect to F_{msy}. Annex III rule 2 would apply for the Sound of Jura as the stock is not over fished with respect to F_{msy}.

Additional considerations

An increasing number of creel boats operate in the Clyde. Creeling activity often takes place during the weekend when the trawlers are not allowed to fish. One third of the creelers operate throughout the year, the rest prosecute a summer fishery.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that FU 13 *Nephrops* falls under Category 6. Accordingly STECF notes that the rules for the above category based on the Firth of Clyde categorisation (Annex IV, rule 1) imply a TAC for FU 13 *Nephrops* (total FU) in 2011 of 5,279 t based on a 15% reduction of the 2010 partial TAC (6,211 t) for this FU. This approach cannot be applied to Firth of Clyde and Jura components separately as disaggregated average landings are not available (in the ICES advice). STECF notes that although the the Sound of Jura is fished below F_{msy}, his is a minor component of the stock, and therefore STECF applied rule 1 for the total FU.

2.1.4. Norway lobster (*Nephrops norvegicus*) in FU 16, Porcupine Bank, Divisions VIIb,c,j,k

FISHERIES: Reported total landings for this FU dcreased to drastically from 2003 t in 2007 to only 825 in 2009. There are concerns about the accuracy of the landings statistics for some fleets. Landings, effort and LPUEs in this fishery indicate increased targeting of *Nephrops* over the last two years by all countries involved in the fishery.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Analytical assessments are not feasible at present.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	Not defined	
Precautionary Approach	Not defined		

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The assessment is based on several indicators, including survey and commercial size, sex ratio and cpue, and lpue data. All of these indicate that the stock that has declined to critically low levels. The 2009 survey data and landings length distribution indicate some incoming recruitment for the first time in several years.

RECENT MANAGEMENT ADVICE:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	Not defined	
Precautionary Approach	Not defined		

The assessment is based on several indicators, including survey and commercial size, sex ratio and cpue, and lpue data. All of these indicate that the stock that has declined to critically low levels. The 2009 survey data and landings length distribution indicate some incoming recruitment for the first time in several years.

MSY approach

Catches in 2011 should be reduced to the lowest possible level to allow the incoming recruitment to rebuild the stock.

PA considerations

Catches in 2011 should be reduced to the lowest possible level to allow the incoming recruitment to rebuild the stock.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 10. ICES notes that the TAC and the stock assessment areas do not match.

ICES advises on the basis of exploitation boundaries in relation to precautionary considerations that catches in 2010 should be reduced to the lowest possible level.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that *Nephrops* in FU16 falls under Category 10. STECF notes that this implies a reduction of at least 25% in TAC. Reducing the 2010 partial TAC (1,574 t) by this proportion results in a value of 1,180 t.

2.1.5. Norway lobster (*Nephrops norvegicus*) in FU 17, Aran Grounds (Division VIIb)

FISHERIES: Reported landings from this FU were around 625 t in 2009, a decline from 1000 t in 2008. In the Aran Grounds the most recent change in the fishery is the proportion of twin-rig vessels, which has increased to over 90 % of the fleet in the past eight years. However, total effort decreased substantially (-37%) in 2009. This is due both to decommissioning of several vessels that actively participated in the fishery heretofore, and the generally poor economic conditions for this fishery.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based on an UWTV surveys. However, the corresponding length composition data are insufficient to base estimates of stock specific F reference point on. The use of reference points from other, similar stocks increases the uncertainties.

REFERENCE POINTS:

	Type	***Value***	***Technical basis***
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	HR 10.5%	Equivalent to $F_{35\%\ SPR}$ for combined sex in 2010
Precautionary Approach			No reference points are defined

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	⊕	⊖	⊕
Precautionary approach (F_{pa},F_{lim})	?	?	?

	UWTV abundance		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The UWTV surveys conducted since 2002 give estimates of abundance that have fluctuated widely without a significant trend. The generally low harvest rate (9% average) appears to have little impact on observed stock fluctuations.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
MSY approach with caution at low stock size	Less than 950 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Not defined
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	Not defined

MSY approach

Following the ICES MSY framework implies harvest ratio of 10.5 %, resulting in landings of 950 t in 2011.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 6, Annex IV.1 would apply as the stock is fished close to the provisional F_{msy} proxy. ICES notes that the TAC and the stock assessment areas do not match.

STECF COMMENTS STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that *Nephrops* in FU17 falls under Category 6. STECF notes that according to the rules for the above category (Annex IV, rule 2) imply a TAC for FU 17 *Nephrops* in 2011 of 950 t (which is within 15% partial TAC assumption) based on the predicted catch corresponding to the F_{msy} harvest ratio (10.5%).

2.2. Cod (*Gadus morhua*) in Division VIa (West of Scotland)

FISHERIES: Cod is taken in mixed demersal fisheries and in Division VIa is now regarded as a by-catch species. The fleets involved include French vessels targeting saithe and Scottish whitefish trawlers. Landings are predominantly taken by EU fleets and were sustained at about 21,000 t until the late 1980s. Landings have since declined markedly to a value of about 220 t in 2009. Landings restrictions in the first half of the 1990s led to considerable misreporting. Legislation introduced in Britain and Ireland in 2006 has reduced misreporting. Observer data, however, show an increase in discards starting in 2006. The management area for this stock also includes cod in VIb, Vb, XII and XIV with a specified share allocated to VIa.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. A catch-at-age model using catch data up to 1994 tuned by survey data and utilizing survey information alone from 1995 onward was used to evaluate trends in spawning-stock biomass and recruitment. Trends in SSB are similar to results from a model based on survey data alone.

REFERENCE POINTS:

	Type	***Value***	***Technical basis***
MSY Approach	MSY $B_{trigger}$	22 000 t	B_{pa}
	F_{msy}	0.19	Provisional proxy by analogy with North Sea cod Fmax. Fishing mortalities in the range 0.17–0.33 are consistent with F_{msy}
Precautionary Approach	B_{lim}	14 000 t	$B_{lim} = B_{loss}$, the lowest observed spawning stock estimated in previous assessments.
	B_{pa}	22 000 t	Considered to be the minimum SSB required to ensure a high probability of maintaining SSB above B_{lim}, taking into account the uncertainty of assessments. This also corresponds with the lowest range of SSB during the earlier, more productive historical period.
	F_{lim}	0.8	Fishing mortalities above this have historically led to stock decline.
	F_{pa}	0.6	This F is considered to have a high probability of avoiding F_{lim}.

STOCK STATUS:

F (Fishing Mortality)		
2007	2008	**2009**

MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	⛔	⛔	⛔
Precautionary approach (B_{pa},B_{lim})	⛔	⛔	⛔

Total mortality is high, but cannot be accurately partitioned into fishing mortality and natural mortality. The spawningstock biomass has increased from an all time low in 2006, but remains well below B_{lim}. Recruitment has been estimated to be low over the last decade. The 2005 and 2008 year classes are estimated to be the largest since 1997 and comparable with the long term geometric mean.

MANAGEMENT OBJECTIVES:

The EU has adopted a long-term plan for cod stocks and the fisheries exploiting those stocks (Council Regulation (EC) 1342/2008). This regulation repeals the recovery plans in Regulation (EC) No 423/2004, and has the objective of ensuring the sustainable exploitation of the cod stocks on the basis of maximum sustainable yield while maintaining a target fishing mortality of 0.4 on specified age groups.
The regulation is complemented by a system of fishing effort limitation (see EC 43/2009 for latest revision).

Because it is not possible at present to assess unaccounted mortality accurately, ICES cannot yet evaluate if the management plan is in accordance with the precautionary approach.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Catches in 2011**
Transition to an **MSY approach** with caution at low stock size	Zero catch
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Zero catch
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

Current landings (i.e. TAC), effort, and spatial management of fisheries catching cod in Division VIa are not controlling mortality levels. Catch (landings + discards) is seven times the reported landings in 2009.

MSY approach: Estimates of F_{msy} for this stock are uncertain due to the absence of fisheries data in the assessment since 1994. However, the estimates are consistent with the proposed F_{msy} for the neighbouring North Sea cod stock. There is no estimate for current fishing mortality for this stock. However, it is likely that current F is above F_{msy}. SSB has declined to a very low level. Therefore, catches (mainly discards) of cod should be reduced to the lowest possible level.

PA Considerations: Given the low SSB and low recruitments in recent years, it is not possible to identify any non-zero catch which would be compatible with the precautionary approach. No targeted fishing should take place on cod in Division VIa. Bycatches including discards of cod in all fisheries in Division VIa should be reduced to the lowest possible level.

The 2008 year class is estimated to be more abundant and consequently additional measures (such as real time closures) to protect it are essential to ensure that it contributes to the rebuilding of the stock. It will be necessary to reduce all sources of fishing mortality on cod to as close to zero as possible if the stock is to recover above B_{pa} as quickly as possible.

Management plan: The stock is considered data poor. Following the cod long term management plan (EC 1342/2008) article 9(a) implies a TAC and associated effort reduction of 25%. This translates to a TAC of less than 180 t. ICES considers that article 10(2) may also apply. Because it is not possible at present to assess unaccounted mortality accurately, ICES cannot yet evaluate if the management plan is in accordance with the precautionary approach.

STECF COMMENTS:

STECF agrees with the ICES assessment of the state of the stock and the advice for 2011. With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that cod in Division VIa falls under Category 4.

STECF notes that in accordance with the multi-annual management plan, landings in 2011 should be 180 t. This figure is calculated on the basis of a 25 % reduction in TAC (Article 9 of the management plan) and a 25% reduction in fishing effort for relevant effort groups (Article 12.4,b).

STECF notes that the results of the ICES assessment indicate that SSB appears to have increased slightly since 2006 without any increasing trend in annual recruitment.

At its cod recovery review subgroup (SGRST 07-02), STECF pointed out that changes in fishing behaviour following reductions in days at sea allocations (such as greater concentration in cod rich areas) may prevent delivery of the required reduction in F and that if managers wished to implement effort reductions through reduced days at sea allocations, additional supportive measures might also need to be considered. STECF notes that cod avoidance measures implemented by UK (Scotland) under its Conservation Credits scheme came into operation in 2008 and has continued in 2009 and 2010 in response to article 13.2 of the cod long-term management plan (Council Regulation (EC) 1342/2008) which allows "*Allocation of additional fishing effort for highly selective gear and cod-avoiding fishing trips***".** STECF further notes the difficulty in assessing the effectiveness of either effort reductions or cod avoidance schemes when overall cod mortality can not be reliably partitioned into natural and fishing mortality.

2.3. Cod (*Gadus morhua*) in Division VIb (Rockall)

FISHERIES: Rockall cod has been exploited predominantly by Scottish, Irish and Norwegian vessels using towed gears. Landings have fluctuated between 500 t and 2,000 t (1984-2000) but thereafter showed a steady decline to a level of about 60 t from 2005. In 2008 and 2009 landings increased to just over 90 t. The management area for this stock also includes cod in Vb, XII and XIV.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES but no explicit management advice is given for this stock.

REFERENCE POINTS: No reference points are defined for this stock.

STOCK STATUS: There is no information on the status of cod in Division VIb.

RECENT MANAGEMENT ADVICE: No advice has been given.

STECF COMMENTS: STECF notes that the state of the stock is unknown

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that cod in Division VIb falls under Category 11. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 for cod in VIb of 83 t based on the recent level of reported landings (2007-2009).

Because cod are taken in a mixed fishery with haddock, management measures adopted for VIb cod should also be consistent with the management measures adopted for VIb haddock.

2.4. Haddock (*Melanogrammus aeglefinus*) in Division VIa (West of Scotland)

FISHERIES: Haddock to the West of Scotland are taken as part of a mixed demersal fishery, with the biggest landings reported by UK (mainly Scottish) trawlers (2,380 tonnes in 2009 representing 88% of the landings); Irish trawlers (297 tonnes in 2009 representing 11% of the landings); and with smaller landings reported by other nations including France, Germany and Norway. Landings by non-EU fleets have not exceeding 100 tonnes over the reported period (1988 – 2009).

In 2006, landings of 5,700 tonnes were reported for this stock, representing an 80% increase on the (previous) record low landings of 3,148 tonnes reported in 2005. Subsequently reported landings fell to 3,700 tonnes in 2007 and 2,800 tonnes in 2008 and 2009.

Recruitment to this stock has varied greatly over the entire time series, however. in recent years recruitment has shown a general and dramatic decline from >450 million in 2000 (the largest on record) to an estimated recruitment of approximately 8 million in 2008 and 2009.

Haddock in Division VIa are mainly caught by trawlers, however these fisheries have declined recently with increasing focus on the corresponding Division VIb (Rockall) fishery and the neighbouring *Nephrops* fishery in Division IVa. There has also been a shift from twin trawls to single trawls, and an increase in the use of pair trawls and seines. These changes were driven by a combination of increased fuel costs during 2008 (driving the shift to more fuel efficient gear) and lack of quota and restrictive day allocations related to the cod recovery plan in Division VIa.

In Scotland the 'Conservation Credits Scheme' (CCS) was implemented at the beginning of February 2008. The two central themes of CCS are aimed at reducing the amount of cod caught by (i) avoiding areas with elevated abundances of cod and (ii) the use of more species-selective gears. Within the scheme, efforts are also being made to reduce discards generally. Although the scheme is intended to reduce cod mortality, it may also affect the mortality of haddock, in either a positive or negative manner.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. In recent years a catch-at-age model using catch data up to 1994 tuned by survey data and utilizing survey information alone from 1995 onward was used to evaluate trends in spawning-stock biomass and recruitment and the model estimated total catch from the fishery without the ability to distinguish between landings and discards. In 2009 catch data was included for the years 2006-2009.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	30 000 t	Bpa
	F_{msy}	0.3	Provisional proxy by analogy with North Sea haddock. Fishing mortalities in the range 0.19 – 0.41are consistent with F_{msy}
Precautionary Approach	B_{lim}	22 000 t	B_{lim} = B_{loss}, the lowest observed spawning stock estimated when reference point was established in 1998
	B_{pa}	30 000 t	B_{pa} = B_{lim} *1.4. This is considered to be the minimum SSB required to obtain a high probability of maintaining SSB above Blim, taking into account the uncertainty of assessments
	F_{lim}	Not defined	
	F_{pa}	0.5	The F below which there is a high probability of avoiding SSB < B_{pa}

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	⊖	⊖	⊖
Precautionary approach (F_{pa},F_{lim})	⊕	⊕	⊕

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	⊖	⊖	⊖
Precautionary approach (B_{pa},B_{lim})	o	⊖	⊖

The very strong 1999 year class caused SSB to increase from a level near the historic low in 2000 to a peak in 2003, although SSB has declined since that time. F has been above F_{pa} in most years since 1987 and has been below F_{pa} since 2007. The 2006 to 2009 year classes are estimated to be below the long term average.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	Landings in 2011
Transition to an **MSY approach** with caution at low stock size	Less than 1500 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Zero catch and management plan
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	940 t

MSY approach

Following the ICES MSY framework implies fishing mortality to be reduced to 55% below F_{msy} because current SSB is 55% below MSY $B_{trigger}$, to 0.14. This implies removals from the stock of 2400 tonnes in 2011. At current rates of landings, discards and unallocated removals this implies landings of 1 300 tonnes in 2011. This is expected to lead to an SSB of around 24 100 t in 2012.

Following the transition scheme towards the ICES MSY framework implies fishing mortality to be reduced to ((0.38*0.8)+(0.3*0.2)) = 0.36 with an additional 55% reduction because SSB is 55% below MSY B trigger which leaves a target F of 0.16 (lower than F_{msy}). This results in removals from the stock of 2900 tonnes and Human consumption landings of 1500 tonnes in 2011. This is expected to lead to an SSB of 23 500 t in 2012.

The (EC) transition scheme without extra reduction on account of low SSB implies a target F of 0.36. This results in removals from the stock of 5800 tonnes and Human consumption landings of 3100 tonnes in 2011. This is expected to lead to an SSB of 20 200 t in 2012.

PA approach

Fishing mortality is estimated to be below F_{pa}. However, SSB is estimated to be below B_{lim}.

The fishing mortality that would be expected to bring SSB above B_{lim} in 2012 would be 0.25. This would imply removals of 4200 tonnes and Human Consumption landings of 2200 tonnes.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 3. The stock is outside safe biological limits because SSB is estimated to be below B_{pa}. This implies removals from the stock following a 22% reduction in F_{2010} to 0.3 (=F_{msy}), with a maximum TAC change of 30%. This results in removals from the stock of 4900 tonnes and Human consumption landings of 2600 tonnes in 2011. This is expected to lead to an SSB of 21 200 t in 2012.

However, in light of the precautionary advice for this stock, the stock can also be classified under category 10 because the advice on this basis would be zero catch. This implies a TAC reduction of 25%.

Management plan

A management plan is under development by the EC (See annex). This works on the following boundaries:

The result for a TAC and SSB in the following year is calculated for F = 0.3.

Rule no	SSB result for F = 0.3:	F for TAC year	Maximum TAC variation
2	SSB > 30 000 t	0.3	15%
3	22 000 t < SSB < 30 000 t	$(0.3-0.2)*((B_{pa}-SSB)/B_{pa}-B_{lim}))$	No maximum
4	SSB < 22 000 t	0.1	No maximum

Following these rules, the TAC would be set on the basis of F = 0.3. However, this leads to an SSB in 2012 lower than 22 000 t (B_{lim}). Therefore the TAC should be set on the basis of paragraph 4, with a target F of 0.1. There is no maximum in inter-annual TAC variation. This results in removals from the stock of 1800 tonnes and Human consumption landings of 940 tonnes in 2011. This is expected to lead to an SSB of 24 700 t in 2012. ICES evaluated this plan and found it to be in accordance with the precautionary approach.

STECF COMMENTS:

STECF agrees with the ICES assessment of the state of the stock and the advised catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that haddock in Division VIa falls under Category 3 (because there is no agreed management plan). Accordingly STECF notes that the rules for the above category imply removals from the stock following a 22% reduction in F_{2010} to 0.3 (=F_{msy}), with a maximum TAC change of 30%. This results in removals from the stock of 4900 t and a TAC (Human consumption landings) of 2600 t in 2011.

STECF notes however that at present the ICES statement that there is no maximum inter-annual TAC variation is correct since there is no agreed management plan in place. However, in the proposed management plan for haddock in VIa, a maximum inter-annual TAC variation of 25% is specified. The implications for the TAC for haddock in VIa under the proposed management plan are given below.

STECF also notes that the proposed management plan for west of Scotland haddock, although not yet implemented is considered precautionary by ICES. The predicted landings in 2011 according to the proposed management plan are 940 t. STECF considers that the values derived from the proposed management plan are more appropriate for the management of exploitation on haddock in 2011.

Special request on haddock in VIa (West of Scotland)

STECF is asked to consider the TAC resulting from application of the rules applied in the management plan for haddock in the North Sea, using the precautionary and limit spawning biomass appropriate for this stock but limiting inter-annual TAC variation to no more than 25%. Such a consideration was conducted by ICES but without the TAC constraint. The resulting TAC represented a 65% reduction in TAC.

STECF response

STECF advises that restricting TAC change to 25% would imply a TAC in 2011 of 2003 t.

2.5. Haddock (*Melanogrammus aeglefinus*) in Division VIb (Rockall)

FISHERIES: The haddock stock at Rockall is an entirely separate stock from that on the continental shelf of the British Isles. Rockall haddock have lower growth rates and reach a lower maximum size than other haddock populations in the Atlantic.

Until recently the Rockall haddock fishery largely occurred in summer months, when conditions are easier and particularly when fishing at Rockall was more profitable compared with the North Sea or West of Scotland. A few Irish vessels did however exploit this stock on a more regular basis.

Haddock are caught in a mixed fishery together with blue whiting and a number of non-assessed species such as grey gurnard. Traditionally Scottish and Irish trawlers target haddock, whilst Russian trawlers also fish for species such as gurnard. UK, Russian and Irish vessels account for the highest proportion of the landings, with smaller quantities taken by other nations including Iceland, France, Spain and Norway.

Since 1987 reported landings have varied between 2,300 t and 8,000 tonnes. For 2009 total landings were a little over 3,800 t. As part of this stock area now falls outside the EU EEZ there was an increase in activity by non-EU fleets, notably Russian Federation vessels, from 1999 onwards, although this has declined in recent years. Landings by non-EU fleets reached a peak in 2004, when reported landings by the Russian Federation amounted to 5,844 t or some 90% of the total. For 2009 the officially reported landings from the Russian Federation and Norway was only 126 t, a reduction of 1,600 t from the previous year.

Effort by the Scottish and Irish fleets has increased in recent years at Rockall and anecdotal information suggests this is partly as consequence of effort restrictions introduced as part of the long-term plan for cod introduced in 2009.

Following the NEAFC agreement in March 2001, an area of the NEAFC zone around Rockall was closed to fishing using demersal trawls; in spring 2002 part of the shallow water in the EU component also. Effort in the rectangle containing the closure declined when the closure came into effect. There was also a decline in UK effort across the bank as a whole at this time, but an increase of effort in other areas of Division VIb. However, it is difficult to determine to what extent these closures have contributed to protecting juveniles.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. The assessment is based on catch numbers-at-age and one survey index (Scottish Groundfish Survey). Discarding occurs in part of the fishery and has been estimated and used in the assessment.The management body is NEAFC.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	9000 t	Bpa
	F_{msy}	0.3	Provisional proxy by analogy with North Sea haddock. Fishing mortalities close to Fsq in 2010
Precautionary Approach	B_{lim}	6000 t	$B_{lim} = B_{loss,}$ the lowest observed spawning stock estimated in previous assessments.
	B_{pa}	9000 t	$B_{pa} = B_{lim} * 1.4$. This is considered to be the minimum SSB required to obtain a high probability of maintaining SSB above B_{lim}, taking into account the uncertainty of assessments.
	F_{lim}	Not defined	Not defined due to uninformative stock recruitment data.
	F_{pa}	0.4	This F is adopted by analogy with other haddock stocks as the F that provides a small probability that SSB will fall below B_{pa} in the long term.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	⊖	⊖	⊕
Precautionary approach (F_{pa},F_{lim})	⊖	⊕	⊕

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	⊕	⊕	⊕
Precautionary approach (B_{pa},B_{lim})	⊕	⊕	⊕

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Less than 2700 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 2400 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

Further measures should be introduced to reduce discarding of haddock in VIb.

MSY approach

Following the ICES MSY framework implies fishing mortality to be reduced to 0.3 (= F_{msy}), resulting in landings of less than 2700 t in 2011. This is expected to lead to an SSB of 8540 t in 2012.

Because F in 2010 is very close to F_{msy}, no transition scheme is necessary.

Further management measures should be introduced to reduce discarding of small haddock in order to maximize their contribution to future yield and SSB.

PA approach

A 26% reduction in F is needed to keep SSB to above B_{pa} in 2012. This corresponds to landings of 2350 t in 2011.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 1 because ICES considers the stock is currently fished very close to F_{msy}. The resulting TAC would be 2710 t.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock but not all advised forecast catch options for 2011. STECF notes that the catch option given by ICES according to COM(2010) 241 FINAL, does not take account of the 25% TAC constraint.
With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that haddock in Division VIb falls under Category 1, stock exploited at the maximum sustainable yield rate. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of less than 3748 t (fishing at F_{msy} but with a 25% TAC constraint).

In order to keep F at or about F_{msy}, STECF agrees that predicted landings from the ICES transition scheme (2,700 t human consumption) be used as a basis for the TAC for Rockall haddock in 2011. STECF notes that setting a TAC according to the provisions of COM(2010) 241 FINAL is predicted to result in a 30% increase in fishing mortality in 2011 compared to 2010.

2.6. Saithe (*Pollachius virens*) in Div´s Vb (EU zone), VI, XII and XIV

The assessment has been combined with that in Sub-Area IV – see Section 1.7.

STECF COMMENTS: STECF notes that the TAC for that area is set according an EU/Norway management plan applying a landings split according to the average in 1993–1998, i.e. 90.6% in Sub-area IV and Division IIIa and 9.4% in Sub-area VI.
STECF notes that this plan has been evaluated to be consistent with the precautionary approach. With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that saithe in Division Vb and sub areas VI, XII and XIV falls under Category 4. STECF notes that in accordance with the multi-annual management plan landings in 2011 should be 103,000 t for the full assessment area, (exploitation at F = 0.3 when stock above B_{pa}). STECF therefore notes that according to the agreed EU/Norway management plan the TAC for 2011 should be set at 9,682 t.

2.7. Whiting (*Merlangius merlangus*) in Division VIa (West of Scotland)

FISHERIES: Whiting occur throughout northeast Atlantic waters, in a wide range of depths, from shallow inshore waters down to 200 m. Adult whiting are widespread throughout Division VIa, while high numbers of juvenile fish occur in inshore areas. There may be a degree of mixing of adult fish between IVa whiting and the VIa component off the northwest of Scotland.

Whiting has never been a particularly valuable species and is primarily taken as a bycatch with other species, such as haddock, cod and anglerfish. Scottish trawlers take most of the whiting catch in Division VIa, Ireland takes a smaller proportion of the catch and all the remaining catch is taken by EU vessels. Whiting in Division VIa are caught mainly by 80–120 mm trawlers. There has been a reduction in trawl and seine effort, with a more moderate reduction by *Nephrops* trawlers. At present a higher proportion of the overall effort is by relatively small-meshed trawls. There has been a tendency to shift from the use of heavy groundgear (like rockhopper) to lighter groundgear.
Since 1987, human consumption landings declined from about 11,500 t to an historic low of 290 t reported officially in 2005. Reported landings for 2009 are 488 t. In 2009 approximately 50% of the total catch in weight was discarded. The fishery is regulated by a TAC that does not seem to restrict catches.

The increase in minimum mesh size from 100 to 120 mm in 2001/2002 (before the introduction of effort regulation 27/2005) partly caused a shift to 80-mm mesh sizes in the mixed fishery trawls, due to the loss of valuable *Nephrops* catches. Poorer selectivity at this mesh size may have led to increased discarding and high grading.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. In 2009 a survey-based assessment was used to evaluate trends in SSB, total mortality, and recruitment.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	Not defined	
Precautionary Approach	B_{lim}	16 000 t	**B**$_{lim}$ = **B**$_{loss}$(1998), the lowest observed spawning stock estimated in previous assessments.
	B_{pa}	22 000 t	**B**$_{pa}$ = **B**$_{lim}$ * 1.4. This is considered to be the minimum SSB required to have a high probability of maintaining SSB above **B**$_{lim}$, taking into account the uncertainty of assessments.
	F_{lim}	1.0	**F**$_{lim}$ is the fishing mortality above which stock decline has been observed.
	F_{pa}	0.6	**F**$_{pa}$ = 0.6 * **F**$_{lim}$. This F is considered to have a high probability of avoiding **F**$_{lim}$.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The state of the stock is unknown, but long-term information on the historical yield and catch composition and the survey-based assessment covering the more recent period all indicate that the present stock size is at a historical low. Fishing mortality estimates have declined since around 2005. Recruitment in the most recent years is estimated to be very low with an indication of an increase in 2010.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Catches in 2011**
Transition to an **MSY approach** with caution at low stock size	Lowest possible catch and reduce discards
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Lowest possible catch
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

The available information on landings, cpue, surveys, and stock structure are adequate to establish and evaluate stock trends but cannot be used to forecast stock development. Based on the recent decline in fishing mortality and increased abundance of the 2009 year class the stock is expected to increase if the year class is not heavily discarded.

MSY considerations

Biomass has declined to record low level in recent years. Exploitation status is unknown with regards to MSY levels. To allow the stock to rebuild, catches (half of which are discarded) should be reduced to the lowest possible level in 2011.

There are strong indications that TAC management control is not effective in limiting the catch.

PA considerations

Given that SSB is estimated at the lowest observed level recent recruitment (with the exception of the 2009 year class) has been weak catches in 2011 should be reduced to the lowest possible level.

Policy paper

In the light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 10 (as catches should be reduced to the lowest possible level). This implies a 25% TAC decrease. The resulting TAC would be 323 t.

STECF COMMENTS:

STECF agrees with the ICES assessment of the state of the stock and the advice for 2011. With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that whiting in Division VIa falls under Category 10. STECF notes however that no seperate TAC is set for whiting in VIa and hence STECF is unable to advise on the TAC that corresponds to the provisions of COM(2010) 241 FINAL.

2.8. Whiting (*Merlangius merlangus*) in Division VIb (Rockall)

FISHERIES: Landings of whiting from Division VIb are negligible, 35t in 2009.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. No assessment has been carried out.

REFERENCE POINTS: No precautionary reference points or reference points related to fishing at MSY have been proposed.

STOCK STATUS: The state of the stock is unknown.

RECENT MANAGEMENT ADVICE: No advice has been provided.

STECF COMMENTS:

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that whiting in Division VIb falls under Category 11. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 for VIb of 35 t (based on the recent level of catches in Division VIb). STECF notes however that no seperate TAC is set for whiting in VIb. Catches in VIb form part of the TAC set for sub area VI and international waters of Vb, XII and XIV.

2.9. Anglerfish (*Lophius piscatorius)* in Vb (EU zone), VI, XII, XIV

FISHERIES: Anglerfish mature at large size, resulting in a high fraction of the catch consisting of immature fish. Catches of anglerfish on the northern shelf (from Division VIb to IIIa) come from the same biological stock. Spawning appears to occur largely in deep water off the edge of the continental shelf, although mature females are rarely encountered. Anglerfish are caught widely in VIa with the highest catch rates occurring along the shelf edge in deeper waters.

Anglerfish are caught in a targeted anglerfish fishery in Sub-Area VI and as a bycatch in other demersal fisheries, including roundfish fisheries in Division VIa, the haddock fishery on Rockall Bank, *Nephrops* fisheries, and fisheries in deeper waters. In the North Sea, anglerfish are caught mainly as a bycatch in demersal fisheries for mixed roundfish and *Nephrops* and to a lesser extent in small meshed *Pandalus* fisheries. Vessels from EU Member States take most of the catch. ICES estimates of landings of anglerfish in Division VI show a similar trend to those in the North Sea – a rapid increase in the late 1980s (from about 6,000 t in 1989 to about 18,000 t in 1996) followed by a continuous decline since 1996 to 5200 t in 2004 . No estimate of total landings is available since 2005. Official landings in 2009 are around 4945 t.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. The assessment now includes anglerfish from Sub-area IV. The information basis for anglerfish is being developed, with

improvements to both industry related data and surveys. There is currently insufficient data to support an analytic assessment of the state of the stock.

REFERENCE POINTS: No precautionary reference points have been agreed for this stock. ICES has previously defined a precautionary fishing mortality reference point of F_{pa}=0.3 (based on $F_{35\%SPR}$), but have been unable to discover the basis for this calculation and so no longer considers it appropriate. New reference points will be defined when a new assessment procedure is developed.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

There is no accepted analytical assessment for this stock. However, recent dedicated anglerfish surveys in Division IVa and Subarea VI indicate a decline in abundance since 2007; and a decline in biomass in 2009 in all areas surveyed with the exception of Division VIb (Rockall).

MANAGEMENT OBJECTIVES: There are no explicit management objectives for this stock but the European Community and Norway are in discussions regarding the joint management of this shared stock.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Catches in 2011**
Transition to an **MSY approach** with caution at low stock size	Catch and effort reduction
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Catch and effort reduction
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

No analytical assessment can be presented for this stock. There are major uncertainties about catch and effort data for anglerfish as well as limited knowledge about population dynamics. Therefore, no forecast can be presented

MSY approach

Due to a decrease in survey estimates of stock abundance and biomass and unknown exploitation pattern catches should be reduced at a rate greater than the rate of stock decrease. Because the catch levels are not known (only landings) this cannot be quantified. Therefore, effort in fisheries that catch anglerfish should be reduced. The time series is only 5 years so the provision of the 2010 survey data will be important for confirming recent trends.

PA considerations

The catch should be reduced and effort in fisheries that catch anglerfish should decrease.

Policy paper

In the light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 7 (State of the stock is not known precisely and reduction of fishing effort is advised). Under Annex IV.5, applying the indices of biomass from the survey as indicators of stock development, then the average total biomass in the last 2 years is 2–3 % higher than the biomass in the 3 years previous to that,

resulting in an unchanged TAC. Applying the indices of abundance from the survey as indicators of stock development gives a decline of around 27%. This would result in a TAC reduction of 15% for 2011.

STECF COMMENTS:

STECF agrees with the ICES assessment of the state of the stock. With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that anglerfish in Vb (EU zone), VI, XII and XIV falls under Category 9 (in contrast to ICES classification as category 7, as STECF sees no clear basis to recommend a reduction in fishing effort). STECF notes the difference in outcome when applying the rules associated with category 6-9 stocks dependent on whether abundance is interpreted as numbers of fish or stock biomass. STECF considers use of stock biomass to be a more appropriate indicator of reproductive potential as it is less sensitive to fluctuations in numbers of small, immature fish.

STECF notes, however, that if estimates of stock biomass are used none of the rules to be applied for category 6-9 stocks can be applied to this stock. This is because representative stock abundance information is considered to exist by ICES and indicates a change in stock abundance – leading to rule 5 – but the averaged estimated abundance in the last two years is neither 20% or more greater (rule 5a) or 20% or more less (rule 5b) than the average estimated abundance in the three preceding years. STECF interprets this to mean that the abundance has not changed and hence Annex IV, rule 4 should apply. Acoordinglu Annex IV, Rule 4 prescribes that the TAC for 2011 should remain unchanged at 5,567 t.

STECF also notes that following ICES suggestions in 2005 a number of initiatives were instigated covering anglerfish in Division IVa and Subarea VI: dedicated Scottish and Irish scientific anglerfish surveys which are coordinated to involve the use of both research vessels and commercial fishing vessels; a Scottish tallybook scheme (linked to a longer time-series of personal diaries); increased observer coverage (short-term initiative in 2006). The scientific surveys are being conducted on an ongoing basis but there are currently only five years of survey data and that is considered not long enough for an assessment of the state of the stock.

2.10. Megrim (*Lepidorhombus whiffiagonis and Lepidorhombus boscii*) in ICES Subarea VI (West of Scotland and Rockall).

The stock summary and advice for megrim in Subarea VI is given together with Divisions Vb, XII and XIV in Section 2.11.

2.11. Megrim (*Lepidorhombus whiffiagonis*.) in Vb (EU zone), VI, XII & XIV

FISHERIES: The main fishery is in Sub-Area VI where megrim is taken as a by-catch in trawl fisheries targeting anglerfish, roundfish species and *Nephrops*. There is however increasing targeting of megrim in response to more restrictive fishing opportunities for other species. Since 2009, ICES also provides advice on megrim in Subarea IV (North Sea). This is because the spatial distribution of landings data and survey catches provide good evidence to suggest that megrim population is contiguous between Divisions IVa and VIa.

The main exploiters are the UK (≥ 80% of catch in the past 4 years), Ireland, France and Spain.

Between 1990 and 2008 nominal catchs of Megrim in Division VIa, VIb and subarea IV as officially reported to ICES have ranged from 1,920 t in 2005 to 6,148 t in 1996. Although combined landings generally declined between 1996 and 2005, they increased each year to 2008. Combined landings in 2009 are uncertain because of no data from some countries.

It is unclear if the trends in landings reflects trends in abundance or are a consequence of changes in trawl effort observed over the period.

- Recent reductions in effort in Scotland and Ireland are considered to have contributed to the decline of landings in Subarea VI.
- In 2009 new mesh regulations introduced in Division VIa have increased the mesh size from 100 to 120 mm (vessels >15 m); this will result in an increase in the length of first capture. This measure, coupled with further effort restrictions associated with the long-term management plan for cod (Council Regulation (EC) No 1342/2008), is likely to result in further effort displacement away from the shelf

fisheries in Division VIa, with indications of effort switching to Rockall (Division VIb). However, at this stage it is not possible to quantify this until an integrated analysis of VMS and logbook data is conducted.

- Landings in VI are well below the TAC. Uptake by France, who account for 44% of the TAC, is very low (~11%).
- Official landings in Sub-area IV and Division IIa in recent years are close to the TAC.

Area misreporting has been prevalent as megrim catches were misreported from Subarea VI into Subarea IV, due to restrictive quotas for anglerfish (i.e. vessels targeting anglerfish misreported all landings including megrim from Subarea VI into Subarea IV). However, in the most recent years there is evidence to suggest that this has reversed as the subarea IV TAC has become more restrictive and increasing targeting of megrim in response to more restrictive fishing opportunities for other species e.g. cod. The extent of this problem is unknown and should be quantified through integrated logbook and VMS analysis.

In the past, management of the megrim stock has been linked to that for anglerfish on the assumption that landings were correlated in the fishery. This may no longer be true due to recent changes in the fishing pattern in the Scottish and Irish fleets, and the dynamics of the species are probably not linked.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. In recent years there has been no analytical assessment for this stock and the management advice has been based on average landings. This year the advice is based on effort.

The information basis for megrim is being developed, with improvements to both industry-related data and surveys. There is currently five years of survey data, which is now considered sufficient to provide advice on stock trends. The quality of the available landings data (specifically the area misreporting), discard information, lack of effort data and cpue data for the main fleet in the fishery, severely hampers the ability of ICES to carry out an assessment for this stock. For stocks like megrim and anglerfish on the northern shelf, there is a general need for improved spatio-temporal resolution of commercial catch and effort data through integration of VMS and logbook data from countries engaged in the fishery.

Since 2009, ICES also provides advice on megrim in Subarea IV (North Sea). This is because the spatial distribution of landings data and survey catches provides good evidence to suggest that megrim population is contiguous between Divisions IVa and VIa.

REFERENCE POINTS: No

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	Not defined	
Precautionary Approach	B_{lim}	Not defined	
	B_{pa}	Not defined	
	F_{lim}	Not defined	
	F_{pa}	Not defined	

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?

Precautionary approach (B_{pa},B_{lim})	?	?	?

There is no analytical assessment for this stock. However, survey indices for ICES Subarea VI show an increase in abundance from 2005 to 2007, which has now stabilised.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Catches in 2011**
Transition to an **MSY approach** with caution at low stock size	Effort should be consistent with no increase in catches
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Effort should be consistent with no increase in catches
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

No analytical assessment can be presented for this stock and there is limited knowledge about the population dynamics. Therefore, no forecast can be presented.

MSY approach

There is an increase in survey indices for the major part of the stock and the exploitation status is unknown, catches should be no higher than recent level. Because the catch levels are not known accurately (uncertain landings and partial discard data) this cannot be quantified. Therefore, effort in fisheries that catch megrim should be restricted to make sure catches are not allowed to increase.

PA considerations

The available information is inadequate to evaluate spawning stock or fishing mortality relative to precautionary boundaries. The effort in the fisheries that catch megrim should be restricted to make sure catches are not allowed to increase.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 8 (state of the stock is not know precisely but biomass indices are stable or increasing), considering Annex IV.5. This gives different results for the two areas.

In Subarea VI, survey biomass indices in the last two years are >20% higher than the survey biomass indices in the three years previous to that. This category would result in an increased TAC of 15% in Subarea VI, but it should be noted that the TAC has not been restrictive in most years.

In Subarea IV survey biomass indices are also >20% higher than the survey biomass indices in the three years previous, however the estimates are of poorer precision and it is not possible to detect any significant trend over the time series. This would result in an unchanged TAC in Subarea IV.

STECF COMMENTS:

STECF agrees with the ICES assessment of the state of the stock and the advised catch options for 2011.

Noting that the survey results indicate an increasing trend in swept-area biomass and with reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that megrim in Vb (EU zone), VI, XII & XIV falls under Category 8. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 3,541 t based on a 15% increase in the TAC for 2011 (Annex IV, rule 5a).

2.12. Plaice (*Pleuronectes platessa*) - Vb (EU zone), VI, XII, XIV

STECF did not have access to any stock assessment information on plaice in these areas.

STECF COMMENTS:

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that plaice in Vb (EU zone), VI, XII and XIV falls under Category 11. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 601 t based on a 15% reduction on the 2010 TAC.

2.13. Sole (*Solea solea*) – VIIhjk

FISHERIES: Sole are predominantly caught within mixed species otter trawl fisheries in Division VIIj. These vessels target mainly hake, anglerfish, and megrim. Beam trawlers and seiners generally take a lesser catch of sole. The major participants in this fishery are Ireland, the UK and France with a smaller contribution from Belgium. Landings fluctuated between 450 t and 1,100 t over the period 1973-1985, 650-900 t over the period 1986-1998 and 400-500 t over the period 1999-2005. Landings have declined since 2005 and in 2008 are estimated to be 225 tonnes. Landings data for 2009 is incomplete.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

REFERENCE POINTS: INSERT TABLE

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	0.31	Provisional proxy based on F_{max}
Precautionary Approach	B_{lim}	Not defined	
	B_{pa}	Not defined	
	F_{lim}	Not defined	
	F_{pa}	Not defined	

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

There is no accepted analytical assessment for this stock and the state of sole stock in Divisions VIIh–k is unknown. However, exploratory estimates of mortality suggest that the current fishing mortality in the VIIjk part of the stock is below the estimated value of F_{msy}.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	No increase in catches
Cautiously avoid impaired recruitment (**Precautionary Approach**)	No increase in catches

Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

No reliable assessment is available for this stock. The main cause of this is the lack of tuning data. Therefore, fishing possibilities cannot be forecasted.

MSY approach

The underlying data do not support the provision of estimates of fishing mortality. However it is likely that recent fishing mortality for the main component of the catch is below F_{msy}. Therefore, catches and effort should not increase in 2011.

PA considerations

Catches and effort should not increase in 2011.

Policy paper

Following the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 6 (Annex IV.4), because the state of the stock is not known precisely and catches should not increase. This implies no change in TAC for 2011 (498 t). However, the last paragraph of Annex IV may also apply since the total TAC has not been restrictive.

STECF COMMENTS:

STECF agrees with the ICES assessment that the state of the stock is unknown.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that sole in Divisions VIIhjk falls under Category 6, (STECF agrees with ICES that catches should not increase). The ICES advice suggests that fishing mortality may be below the proxy used for F_{msy} but it is not possible to calculate a TAC that would result in F at F_{msy} (annex 4, rule 2). Therefore under annex 4 rule 4 – unchanged TAC - would apply. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 498 t.

2.14. Sole (*Solea solea*) - VIIbc

FISHERIES: Ireland is the major participant in this fishery. Sole are normally caught in mixed species otter trawl fisheries in Division VIIb. These vessels mainly target other demersal fish species and *Nephrops*. Recent catches have varied between 78 t in 2000 and 37 t in 2008 and have been close to the TAC. Landings data for 2009 is incomplete.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

REFERENCE POINTS: No reference points have been proposed for this stock.

STOCK STATUS: The state of the stock is unknown and there is no basis for an advice.

RECENT MANAGEMENT ADVICE: The available landing data are not reliable indicators of sole abundance in Division VIIb,c. Therefore, fishing possibilities cannot be projected.

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown. With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that sole in Divisions VIIbc falls under Category 11. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 42 t, (using an average of landings used by ICES in 2006-2008 because of incomplete landings data in 2009).

2.15. Norway pout (*Trisopterus esmarki*) in Division VIa (West of Scotland)

FISHERIES: Total landings are available for this stock for the years 1987 – 2008. Landings during this period have varied considerable, from a high in 1987 of some 38,000 tonnes to less than 50 tonnes every year since 2005. Historically the majority of landings have been taken by Danish fleets with lesser catches by UK, Netherlands and Germany.

There are currently no dedicated fisheries for Norway Pout in Division VIa (West of Scotland).

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

REFERENCE POINTS: No fishing mortality or biomass reference points are defined for this stock.

STOCK STATUS: No assessment is conducted for this stock.

RECENT MANAGEMENT ADVICE: The only data available are official landings statistics which have been highly variable and do not provide an adequate basis for scientific advice.

STECF COMMENTS: STECF notes there is no assessment for this stock. With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Norway pout in Division VIa falls under Category 11. In the absence of any data on catches of Norway pout from VIa in recent years, STECF is unable to provide a TAC according to the rules for category 11.

2.16. Sandeel (*Ammodytes spp. & Gymnammodytes spp.*) in Division VIa

FISHERIES: In the past the stocks were exploited exclusively by Scottish vessels. Recorded landings were between 15,000 t and 25,000 t from 1987 to 1990. Landings of between 5,000 t and 13,000 t were taken between 1991 and 2000 (except for 2,600 t in 1999). From 2001 landings fell sharply. The last recorded landings by Scotland were in 2004. Recorded landings have been zero in 2003, 2005 and 2006. In 2007 57 t were reported landed by the Faroe Islands, the first time this country has reported landings of sandeel from VIa.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The only recent data available, however, are official landings statistics which have been highly variable and do not provide an adequate basis for scientific advice. The stock was last assessed in 1996.

REFERENCE POINTS: none.

STOCK STATUS: The available information is inadequate to evaluate stock trends relative to risk, so the state of the stock is unknown.

RECENT MANAGEMENT ADVICE: none.

STECF COMMENTS: STECF notes there is no assessment for this stock. With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that sandeel in Division VIa falls under Category 11. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 0 t, (the 2010 TAC is zero and recent landings have been zero).

STECF notes that work to better understand potential trends in natural mortality on cod in division VIa by modelling seal predation has been hampered because the level and trend in sandeel biomass available to the seal population west of Scotland is not known. As such, a lack of knowledge about this stock is potentially adversely affecting assessment of stocks of high commercial importance in the area.

2.17. Rays and skates in ICES Subareas VI and VII

Previous stock summaries and advice for rays and skates has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice for subareas VI and VII separately. Furthermore, ICES has not issued any new advice since 2008. The stock summary and advice for rays and skates in subareas VI and VII will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice for these stocks is

given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

2.18. Catsharks and Nursehounds (*Scilliorhinus canicula and Sciliorhinus stellaris*) in Subareas VI and VII

Previous stock summaries and advice for catsharks and nursehounds has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice for subareas VI and VII separately. Furthermore, ICES has not issued any new advice since 2008. The stock summary and advice for catsharks and nursehounds in subareas VI and VII will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice for these stocks is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

2.19. Tope (*Galleorhinus galeus*) in ICES Subareas VI and VII

Previous stock summaries and advice for tope has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice for subareas VI and VII separately. Furthermore, ICES has not issued any new advice since 2008. The stock summary and advice for tope in subareas VI and VII will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice for this stock is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

2.20. Other demersal elasmobranches West of Scotland

Previous stock summaries and advice for demersal elasmobranchs has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice for subareas VI and VII separately. Furthermore, ICES has not issued any new advice since 2008. The stock summary and advice for other demersal elasmobranchs in subareas VI and VII will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice for these stocks is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

2.21. Herring (*Clupea harengus*) in Division VIa North

FISHERIES: Historically, catches have been taken from this area by three fisheries:

1) A Scottish domestic pair trawl fleet and the Northern Irish fleet operating in shallower, coastal areas, principally fishing in the Minches and around the Island of Barra in the south; younger herring are found in these areas. This fleet has reduced in recent years.

2) The Scottish single-boat trawl and purse seine fleets, with refrigerated seawater tanks, targeting herring mostly in the northern North Sea, but also operating in the northern part of Division VIa (N). This fleet now operates mostly with trawls, but many vessels can deploy either gear.

3) An international freezer-trawler fishery has historically operated in deeper water near the shelf edge where older fish are distributed. These vessels are mostly registered in the Netherlands, Germany, France, and England, but most are Dutch owned.

In recent years the age structure of the catch of these last two fleets has become more similar. A stricter enforcement regime in the UK is responsible for the major decrease in area misreporting in 2006.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based on catch data and an acoustic survey. This assessment is considered to be noisy but unbiased. Misreporting has decreased since 2006 and the quality of the catch data has improved.

REFERENCE POINTS:

	Type	Value	Technical basis
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	0.25	Simulations under different productivity regimes (Simmonds and Keltz, 2007). HAWG 2010
Precautionary approach	B_{lim}	50 000 t	Lowest reliable estimate of SSB
	B_{pa}	Not defined	
	F_{lim}	Not defined	
	F_{pa}	Not defined	

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	2009
MSY (F_{msy})	⊖	⊕	⊕
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	2010
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{lim})	⊕	⊕	⊕

The stock over recent years has been fluctuating at a low level and is being exploited close to F_{msy}. Recruitment has been very low since 1998.

MANAGEMENT AGREEMENT: The EU adopted a management plan on 18 December 2008 (Council Regulation (EC) 1300/2008) based on the following rule;

SSB in the year of the TAC	Fishing mortality	TAC constraint
SSB > 75 000 t	F = 0.25	20%
SSB < 75 000 t	F = 0.2	20%
SSB < 62 500 t	F = 0.2	25%
SSB < 50 000 t (B_{lim})	F = 0	-

ICES has evaluated the plan and concludes that it is in accordance with the precautionary approach.

Agreed Management Plan for VIaN herring: Council Regulation 1300/2008

1. Each year, the Council, acting by qualified majority on the basis of a proposal from the Commission, shall fix for the following year the TAC applicable to the herring stock in the area west of Scotland, in accordance with paragraphs 2 to 6.

2. When STECF considers that the spawning stock biomass level will be equal or superior to 75 000 tonnes in the year for which the TAC is to be fixed, the TAC shall be set at a level which, according to the advice of STECF, will result in a fishing mortality rate of 0.25 per year. However, the annual variation in the TAC shall be limited to 20%.

3. When the STECF considers that the spawning stock biomass level will be less than 75 000 tonnes but equal or superior to 50 000 tonnes in the year for which the TAC is to be fixed, the TAC shall be set at a level which, according to the advice of STECF, will result in a fishing mortality rate of 0,2 per year. However, the annual variation of the TAC shall be limited to:

(a) 20% if the spawning stock biomass level is estimated to be equal or superior to 62 500 tonnes but less than 75 000 tonnes;

(b) 25% if the spawning stock biomass level is estimated to be equal or superior to 50 000 tonnes but less than 62 500 tonnes.

4. When STECF considers that the spawning stock biomass level will be less than 50 000 tonnes in the year for which the TAC is to be fixed, the TAC shall be set at 0 tonnes.

5. For the purposes of the calculation to be carried out in accordance with paragraphs 2 and 3, STECF shall assume that the stock will experiences a fishing mortality rate of 0,25 in the year prior to the year for which the TAC is to be fixed.

6. By way of derogation from paragraphs 2 or 3, if STECF considers that the herring stock in the area west of Scotland is failing properly to recover, the TAC shall be set at a level lower than that provided for in those paragraphs.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Less than 22 500 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	22 481 t

MSY approach

Following the ICES MSY framework implies fishing mortality at $F_{msy} = 0.25$, resulting in landings of less than 22,500 t in 2011. This is expected to lead to an SSB of 95,900 t in 2012

Management plan

Following the agreed management plan implies a TAC of 22,481 t in 2011 which is expected to lead to a TAC reduction of 13%.

STECF COMMENTS:

STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that herring in Division VIa North falls under Category 4. STECF notes that in accordance with the multi-annual management plan, landings in 2011 should be 22,481 t which is an 8% reduction on the 2010 TAC and not a 13% reduction.

2.22. Herring (*Clupea harengus*) in the Clyde (Division VIa)

The following text remains unchanged because ICES has not undertaken any new assessments or provided any new advice since 2005.

FISHERIES: There are two stock components present on the fishing grounds, resident spring-spawners and immigrant autumn-spawners. The UK exploits the small stock of herring in this area. TACs have been set at 800 t since 2006. Since 1999, annual landings have varied from no fishing in 2004 to around 600 t in 2007.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. No analytical assessment has been made in recent years and no independent survey data are available for recent years.

REFERENCE POINTS: No precautionary reference points have been proposed for this stock.

STOCK STATUS The available information is inadequate to evaluate stock trends, and the state of the stock is uncertain.

RECENT MANAGEMENT ADVICE: Until new evidence is obtained on the state of the stock, existing time and area restrictions on the fishery should be continued in 2010.

STECF COMMENTS: With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that herring in the Clyde falls under Category 11. Accordingly STECF notes that the rules for the above category imply the TAC in 2011 should be adjusted towards recent real catch levels, but should not change by more than 15% per year.

2.23. Herring (*Clupea harengus*) in Division VIa south and VIIbc

FISHERIES: In recent years only Ireland and the Netherlands have recorded catches from this area with minimal landings taken by the Netherlands in 2007. Catches in 2008 amounted to 10,237 t which is a decrease on the 2007 figure (12,675 t). The fishery exploits a mixture of autumn-and winter/spring-spawning fish. The winter/spring-spawning component is distributed in the northern part of the area. The main decline in the overall stock appears to have taken place on the autumn-spawning component.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Exploratory assessment runs showed similar trends in stock development over a range of assumptions.

REFERENCE POINTS:

	Type	Value	Technical basis
MSY Approach	MSY $B_{trigger}$		Under development
	F_{msy}	0.25	Stochastic simulations on segmented regression stock recruit relationship, under different productivity regimes.
Precautionary approach	B_{lim}	81 000 t	Lowest reliable estimate
	B_{pa}	110 000 t	1.4 B_{lim}
	F_{lim}	0.33	F_{loss}
	F_{pa}	0.22	$F_{med}(98)$

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**

MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa} B_{lim})	?	?	?

Exploratory assessments suggest that SSB may be stable at a low level. The current level of SSB is uncertain but likely to be below B_{lim}. There is no evidence that large year-classes have recruited to the stock in recent years.

RECENT MANAGEMENT ADVICE:

MSY considerations

Given the low SSB and low recruitment it is not possible to identify any non zero catch which would be compatible with the MSY transition scheme.

PA approach

Although current stock status is unknown, SSB is likely to be below B_{lim} and F is above F_{lim}. Therefore, there should be no fishing without a rebuilding plan.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 10 because advice is for a zero catch. This would imply a 25% reduction in TAC. The resulting TAC in 2011 would be 5,600 t.

STECF COMMENTS: STECF agrees with the ICES advice.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that herring in Divisions VIa North and VIIbc falls under Category 10. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 5,600 t.

2.24. Herring (*Clupea harengus*) in Division Vb and VIb.

No assessment is made for these areas and no information was available to STECF from these areas.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that herring in Divisions Vb and VIb falls under Category 11. Accordingly STECF notes that the rules for the above category imply the TAC in 2011 should be adjusted towards recent real catch levels, but should not change by more than 15% per year.

3. Resources in the Celtic and Irish Seas

3.1. Norway lobster (*Nephrops norvegicus*) in Celtic and Irish Seas

Norway lobster in this region contains 4 Functional Units:

FU no.	Name	ICES Divisions	Statistical rectangles
14	Irish Sea East	VIIa	35–38E6; 38E5
15	Irish Sea West	VIIa	36E3; 35–37 E4–E5; 38E4
19	Ireland SW and SE coast	VII,g,j	31–33 D9–E0; 31E1; 32E1–E2; 33E2–E3

20–22	Celtic Sea	VIIg,h	28–30 E1; 28–31 E2; 30–32 E3; 31 E4

Of these, FU 14 (Irish Sea E.) and FU 15 (Irish Sea W.) are currently assessed on basis of UWTV surveys. On basis on the UWTV surveys current stock abundance and harvest ratios are estimated.

MSY approach

There are no precautionary reference points defined for *Nephrops*. Under the new ICES MSY framework, exploitation rates which are likely to generate high long-term yield (and low probability of stock overfishing) have been explored and proposed for each functional unit. Owing to the way *Nephrops* are assessed, it is not possible to estimate F_{msy} directly and hence proxies for F_{msy} are determined. Three candidates for F_{msy} are $F_{0.1}$, $F_{35\%SpR}$ and F_{max}. There may be strong difference in relative exploitation rates between the sexes in many stocks. To account for this values for each of the candidates have been determined for males, females and the two sexes combined. The appropriate F_{msy} candidate has been selected for each Functional Unit independently according to the perception of stock resilience, factors affecting recruitment, population density, knowledge of biological parameters and the nature of the fishery (relative exploitation of the sexes and historical Harvest Rate vs. stock status).

A decision making framework based on the table below was used in the selection of preliminary stock specific F_{msy} proxies. These may be modified following further data exploration and analysis. The combined sex F_{msy} proxy should be considered appropriate provided that the resulting percentage of virgin spawner per-recruit for males or females does not fall below 20%. In such a case a more conservative sex specific F_{msy} proxy should be picked over the combined proxy.

		Burrow Density (average numbers/m2)		
		Low <0.3	Med 0.3-0.8	High >0.8
Observed larvest rate or landings compared to stock status	>Fmax	F35%	Fmax	Fmax
	Fmax-F0.1	F0.1	F35%	Fmax
	<F0.1	F0.1	F0.1	F35%
	Unknown	F0.1	F35	F35%
Stock Size Estimates	Variable	F0.1	F0.1	F35%
	Stable	F0.1	F35%	Fmax
Knowledge of biological parameters	Poor	F0.1	F0.1	F35%
	Good	F35%	F35%	Fmax
History Fishery	Stable spatially and temporally	F35%	F35%	Fmax
	Sporadic	F0.1	F0.1	F35%
	Developing	F0.1	F35%	F35%

Preliminary MSY $B_{trigger}$ reference points were proposed at the lowest observed UWTV abundance. However, the time series of surveys in Subarea VII are too short for that. For FU 15 where a longer series of survey trawl cpue was available this has been used to estimate a preliminary MSY $B_{trigger}$.
For the FUs covered by UWTV surveys advice for 2011 is provided. The advice for 2012 for the other FUs is the same as for 2011 (biennial advice given in 2010).

STECF COMMENTS: The management approach with an aggregated TAC is is a major obstacle for a management complying with the Commissions Communication on Fishing opportunities for 2010 (COM(2010) 241). It furthermore runs the risk of unbalanced effort distribution, which has been a particular problem in the Porcupine bank, where a large increase in effort over the past 5 years has occurred with a subsequent substantial decline in the stock as the application of Annexes III and IV require a TAC for each stock (in this case FU). To facilitate the provision of advice on landings for each FU consistent with Annexes III and IV of COM(2010) 241-FINAL, STECF has derived 'partial TAC's for each FU. These values have been derived by distributing the 2010 VII TAC across FUs in proportion to the recent average landings (07-09) from each FU. (see below).

STECF notes that there also are *Nephrops* catches in "other rectangles" in Sub-area VII (including norwest coast of Ireland which has previously been treated as a separate FU (18)). ICES considers that to provide some

guidance on appropriate future landings for these areas, the use of an average landings figure of around 200 tonnes could be considered.

A summary of ICES advice and application of the Annex III & IV rules in COM(2010) 241-FINAL for Sub-area VII is given below. It should be noted, however, that despite the provision of a Sub-area VII total in this table, STECF still **recommends** that *Nephrops* FUs should be managed separately. FUs 17 and 19 are dealt with in Section 2.1 but included in the table here for completeness.

	FU14	FU15	FU16	FU17	FU19	FU20-22	Other	Total
Average landings (07-09)	793	9357	1337	926	877	5553	216	19060
FU 'partial TAC'	933	11013	1574	1090	1032	6536	255	22432[1]
ICES Advice	680	9500	0	950	Reduce landings/< 800	Reduce landings/<5300	200	17430[2]
Category	6	6	10	6	6	6	6	
Rule	IV.1	IV.1		IV.2	IV.4	IV.4	IV.4	
Policy	793	9500	1180[3]	950	1032	6536	255	20246

[1)] 2010 TAC VII.

[2)] Sum of ICES advice – uses numerical options when available

[3)] This value represents a 25 % reduction on the 2010 'partial TAC'. Category 10 implies a reduction of at least 25 %.

3.1.1. Norway lobster (*Nephrops norvegicus*) in FU 14, Irish Sea East (Division VIIa)

FISHERIES: Prior to 2007 landings from this FU was believed to be underreported. However, new legislation in 2007 increased the reliability of the landings data. In recent years (2008 and 2009)estimated landings were around 700 t. Most of the landings are taken by the UK with the Republic of Ireland taking the remainder. The *Nephrops* trawl fisheries take by-catches of other species such as cod and particularly juvenile whiting.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment in 2010 is based UWTV surveys of absolute abundance. At the ICES Benchmark Workshop on *Nephrops* in 2009 the major sources of bias associated to UWTV survey estimates of absolute abundance were quantified and an overall bias correction factor derived.

REFERENCE POINTS:

	Type	***Value***	***Technical basis***
MSY Approach	MSY $B_{trigger}$	Not defined	No available reference. UWTV time series too short.
	F_{msy}	Harvest ratio 13.0%	Equivalent to $F_{35\%SPR}$ for combined sexes in 2010.
Precautionary Approach	Not defined		

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	+	−
Precautionary approach (F_{pa},F_{lim})	?	?	?

	UWTV abundance		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

Current harvest rates are around the MSY reference point.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Less than 680 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

MSY approach

Following the ICES MSY framework implies the harvest ratio to be reduced to 13.0%, resulting in landings 600 t in 2011. Following the ICES MSY framework implies the harvest ratio (F2010*0.8 + Fmsy*0.2 = 15.0*0.8+0.13*0.2) to be reduced to 14.6%, resulting in landings 680 t in 2011

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified as a category 6 stock. Annex IV.1 would apply as the stock is overfished with respect to Fmsy. ICES notes that the TAC area and the stock assessment area do not match.

Additional considerations

The Nephrops trawl fisheries take bycatches of other species, especially juvenile whiting, haddock and some cod. Catches of cod and whiting should be reduced to as low as possible because of the poor status of these stocks.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that FU 14 *Nephrops* falls under Category 6. Accordingly STECF notes that the rules (ANNEX IV.1) for the above category imply a TAC for FU 14 *Nephrops* in 2011 of 793 t based on a reduction of the 2010 'partial TAC' of this FU (933 t) by 15 % following the approach described in Section 3.1.

3.1.2. Norway lobster (*Nephrops norvegicus*) in FU 15, Irish Sea West (Division VIIa)

FISHERIES: Prior to 2007 landings from this FU are believed to be underreported. However, new legislation in 2007 increased the reliability of the landings data. Estimated landings in 2008 were more than 10500 t from the Irish Sea West. Most of the landings are taken by the UK and the Republic of Ireland. The *Nephrops* trawl fisheries take by-catches of other species such as cod and particularly juvenile whiting. 2009 landings from this FU were more than 9198 t, a decrease of 12% compared to 2008 landings.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based UWTV surveys of absolute abundance. At the ICES Benchmark Workshop on *Nephrops* in 2009 the major sources of bias associated to UWTV survey estimates of absolute abundance were quantified and an overall bias correction factor derived.

REFERENCE POINTS:

	Type	***Value***	***Technical basis***
MSY Approach	MSY $B_{trigger}$	3 billion individuals	Minimum abundance observed based in a scaled trawl survey
	F_{msy}	HR 17.1%	Equivalent to F_{max} for combined sexes in 2010.
Precautionary Approach	Not defined		

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	2009
MSY (F_{msy})	+	−	−
Precautionary approach (F_{pa},F_{lim})	?	?	?

	UWTV abundance		
	2008	2009	2010
MSY ($B_{trigger}$)	+	+	+
Precautionary approach (B_{pa},B_{lim})	?	?	?

Density of *Nephrops* in FU15 is considered very high (average density 1.1/m^2), recent harvest rates have been high (>F_{max}) and the stock size appears to be stable at a high level.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Less than 9500 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

MSY approach

Following the ICES MSY framework implies harvest ratio to be reduced to 17.1, resulting in landings of 8 700 t in 2011. Following the transition scheme towards the ICES MSY framework implies the harvest ratio should be reduced (0.8 x harvest ratio (F2010) + 0.2 x harvest ratio(Fmsy) = 19.0*0.8 + 17.1*0.2 to 18.6% resulting in landings of 9 500 t in 2011.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 6, Annex IV.1 would apply as the stock is overfished with respect to Fmsy. ICES notes that the TAC area and the stock assessment area do not match.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that FU 15 *Nephrops* falls under Category 6. Accordingly STECF notes that the rules for the above category (IV.1) imply a TAC for FU 15 *Nephrops* in 2011 of 9, 500 t based on the predicted catch corresponding to a 20 % reduction in current harvest ratio (19 %) towards F_{msy} (17.1%) which falls within 15% of the 2010 assumed partial TAC..

3.1.3. Norway lobster (*Nephrops norvegicus*) in FU19, SW and SE Ireland (Divisions VII g, j)

FISHERIES: Reported landings for this FU were 833 t in 2009, but there are concerns about the accuracy of the landings statistics in some fleets. Similar to the situation in Aran Grounds the most recent change in the fishery is the proportion of twin-rig vessels, which has increased to over 90 % of the fleet in the past eight years. This implies a large increase in effective effort, even if such an increase is not observed in the nominal effort figures.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Biennial advice (for 2011 and 2012) for this FU was provided in 2010. Analytical assessments are not feasible at present.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	Not defined	
Precautionary Approach		Not defined	

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

Stock status is not known. Landings have been variable throughout the time-series, reaching the highest observed levels in 2002–2004. Landings from 2005 onwards have been around the average. LPUE has fluctuated without a detectable trend over the short time-series.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011 and 2012**
Transition to an **MSY approach** with caution at low stock size	Reduce catches
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 800 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

MSY approach

Considering the stable lpue trend and unknown exploitation status, catches should be reduced from the recent level.

PA considerations

ICES considers that the current fishery does not appear to be detrimental to the stock and recommends that *Nephrops* fisheries should not be allowed to increase relative to recent landings. This corresponds to landings of no more than 800 tonnes.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 6 because the state of the stock is unknown, but advice for an appropriate catch level is available. Indicators have been stable in recent years. ICES notes that the TAC and the stock assessment areas do not match.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice basis for 2011. However STECF notes that the recent level of landings (average 2007-2009) = 877 t and not 800 t as indicated by the ICES advice

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that *Nephrops* in FU 19 falls under Category 6. Accordingly STECF notes that the rules for the above category (Annex IV, rule 4) imply an unchanged TAC in 2011. Based on the 'partial TAC' for this FU derived in Section 3.1, this implies landings of 1032 t in 2011.

3.1.4. Norway lobster (*Nephrops norvegicus*) in FU 20-22, Celtic Sea (Divisions VIIf, g, h)

FISHERIES: There are three Functional Units in the Celtic Sea area but they are treated as one. Landings from this stock are reported by France, the Republic of Ireland and the UK, the main contributors being France and Ireland. In 2009 total reported landings amounted to 5359 t, a 10 % decline compared to 2008. France accounted for 2156 t and Ireland for 2844 t, while UK took 359 t. There has been a considerable increase in Irish landings, from around 500 t in 1990 to more than 3,400 t in 2008. There has also been increasing effort by Irish vessels targeting *Nephrops* in the Celtic Sea in recent years. Discarding is substantial, but varies between fleets and areas.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Biennial advice (for 2009 and 2010) for this FU was provided in 2008. The advice is based on recent average landings and indicators for LPUE and CPUE.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	Not defined	
Precautionary Approach		Not defined	

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The stock is considered to be stable based on long term indicators (lpue, mean size) and recent UWTV survey data. There have been indications of strong recruitment in recent years (e.g. 2006).

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011 and 2012**
Transition to an **MSY approach** with caution at low stock size	Reduce landings from recent level

Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 5 300 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	

No analytical assessment can be presented for this stock. Therefore, fishing possibilities cannot be forecasted.

MSY approach

Considering the stable lpue trend and unknown exploitation status, catches should be reduced from the recent level.

PA considerations

ICES considers that the current fishery does not appear to be detrimental to the stock and recommends that *Nephrops* fisheries should not be allowed to increase relative to recent landings. This corresponds to landings of no more than 5300 t.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 6 because the state of the stock is unknown but advice for an appropriate catch level is available. Indicators have been stable in recent years. ICES notes that the TAC and the stock assessment areas do not match.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice basis for 2011. However STECF notes that the recent level of landings (average 2007-2009) = 5,553 t and not 5,300 t as indicated by the ICES advice

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that *Nephrops* in FU20-22 falls under Category 6. Accordingly STECF notes that the rules for the above category (Annex IV, rule 4) imply an unchanged TAC in 2011 and when applied to the 'partial TAC' for this FU (See Section 3.1) gives 6,536 t for 2011.

3.2. Cod (*Gadus morhua*) in area VIIa (Irish Sea Cod)

FISHERIES: The Irish Sea cod fishery has traditionally been carried out by otter trawlers targeting spawning cod in spring and juvenile cod in autumn and winter. Activities of these vessels have decreased, whilst a fishery for cod and haddock using large pelagic trawls increased substantially during the 1990s. In recent years the pelagic fishery has also targeted cod during the summer. Cod are also taken as a by-catch in fisheries for *Nephrops*, plaice, sole and rays. Landings are taken entirely by EU fleets and were between 6,000 t and 15,000 t from 1968 to the late 1980s. There has since been a steep decline in landings to levels as low as 1,300 t in 2000. There has been a slight increase from this level in 2001 and 2002 (up to 2,700 t) but since then, landings have continuously declined to the record low value of 470 t in 2009. The quality of the commercial landings and catch-at-age data for this stock deteriorated in the 1990s following reductions in the TAC without associated control of fishing effort. Legislation introduced in Britain and Ireland in 2006 has reduced misreporting.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on an age-based assessment using commercial and survey data. Reported landings are replaced by estimates derived from a port sampling scheme for the years 1991-1999. From 2000 the model estimates the removals needed for abundance estimates to follow the same trends as observed by surveys in the area.

REFERENCE POINTS:

	Type	***Value***	***Technical basis***
MSY Approach	MSY $B_{trigger}$	10 000 t	Bpa
	F_{msy}	0.4	Provisional proxy, Fishing mortalities in the range of 0.25–0.54 are consistent with F_{msy}
Precautionary	B_{lim}	6000 t	B_{lim}= $B_{loss,}$ lowest observed level.
	B_{pa}	10 000 t	B_{pa} = MBAL, this level affords a high probability of maintaining the

			SSB above B_{lim}. Below this value the probability of below-average recruitment increases.
Approach	F_{lim}	1.00	$F_{lim}= F_{med}$
	F_{pa}	0.72	F_{pa}: F_{med}* 0.72. This F is considered to have a high probability of avoiding F_{lim}. Fishing mortalities above F_{pa} have been associated with the observed stock decline.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	⛔	⛔	⛔
Precautionary approach (F_{pa},F_{lim})	⛔	⛔	⛔

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	⛔	⛔	⛔
Precautionary approach (B_{pa},B_{lim})	⛔	⛔	⛔

The fishing mortality in recent years is uncertain, but total mortality remains very high. The spawning-stock biomass has declined ten-fold since the late 1980s and has had reduced reproductive capacity since the mid-1990s. The spawning-stock biomass remains well below B_{lim}. After 7 years of some of the lowest recruitments in the time series, the 2009 year class is estimated to be more abundant and is estimated by surveys to be the largest since 2001.

MANAGEMENT AGREEMENTS:

To rebuild the SSB of the stock, a spawning closure was introduced in 2000 for ten weeks from mid-February which was argued to maximize the reproductive output of the stock (EU Regulations 304/2000 and 549/2000). The measures were revised in 2001, 2002, 2003 and 2004, involving a continued, but smaller spawning ground closure, coupled with changes in net design to improve selectivity.

The EU has adopted a long-term plan for cod stocks and the fisheries exploiting those stocks (Council Regulation (EC) 1342/2008). This regulation repeals the recovery plans in Regulation (EC) No 423/2004, and has the objective of ensuring the sustainable exploitation of the cod stocks on the basis of maximum sustainable yield while maintaining a target fishing mortality of 0.4 on specified age groups.

The regulation is complemented by a system of fishing effort limitation (see EC 43/2009 for latest revision).

ICES has evaluated the management plan and found that all scenarios with the TAC constraints imposed (±20%) show very low probabilities of recovering the stock to B_{lim} by 2015. ICES therefore considers the management plan not to be in accordance with the precautionary approach. If the TAC constraint is taken off, the chances of recovering the stock before 2015 increase significantly, although they remain low.

RECENT MANAGEMENT ADVICE:

Advice Summary for 2011

Management Objective (s)	Landings in 2011
Transition to an MSY approach with caution at low stock size	Zero catch
Cautiously avoid impaired recruitment (Precautionary Approach)	Zero catch
Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability)	n/a

Current landings (i.e. TAC) effort and spatial management of fisheries catching cod in Division VIIa are not controlling mortality levels.

Outlook for 2011

No short term forecast is provided because recent mortality values are highly uncertain due to unaccounted mortality. However, assuming a 25% reduction in mortality in 2010, the spawning-stock biomass is expected to increase in 2011 due to the higher recruitment estimated in 2009. Given the uncertainty in the F estimation the MSY results below should be treated with caution. Current landings (i.e. TAC), effort, and spatial management of fisheries catching cod in Division VIIa are not controlling mortality levels.

MSY approach

Fishing mortalities in the range 0.25–0.54 are consistent with maximising yield long-term for cod in Division VIIa. This is consistent with the management plan target fishing mortality of 0.4. Given the low SSB and low recruitment it is not possible to identify any non zero catch which would be compatible with the MSY transition scheme. This implies no targeted fishing should take place on cod in Division VIIa. Bycatches including discards of cod in all fisheries in VIIa should be reduced to the lowest possible level.

PA considerations

No targeted fishing should take place on cod in Division VIIa. Bycatches including discards of cod in all fisheries in Division VIIa should be reduced to the lowest possible level.

Management plan(s)

Following the cod long term management plan (EC 1342/2008) the stock is considered data poor which implies using article 9(a). This results in a TAC and associated effort reduction of at least 25%. This translates to a TAC of less than 506 t. ICES considers that article 10(2) may also apply.

ICES (2009) evaluated the plan and considers the management plan not to be in accordance with the precautionary approach.

STECF COMMENTS:

STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that cod in Division VIIa falls under Category 4. STECF notes that in accordance with the multi-annual management plan, landings in 2011 should be 506 t on the basis of a 25% reduction in the TAC under article 9.

STECF further notes the considerable problems with the assessment for this stock. STECF believes that the bias and uncertainty in the assessment are being exacerbated by the deterioration in availability and reliability of catch and effort data although the recent implementation of stricter landings enforcement has potentially improved the quality of the landings data from 2006 onwards.

3.3. Cod (*Gadus morhua*) in areas VIIe-k

FISHERIES: Cod in Divisions VIIe-k are taken as a component of mixed trawl fisheries. Landings are made mainly by French gadoid trawlers, which prior to 1980 were mainly fishing for hake in the Celtic Sea. Landings peaked in 1989 at 20,000 t following which they have been maintained between 6,000 and 13,000 t until 2003 since when landings have been between around 3,500 t. All landings are taken by EU fleets.

SOURCE OF MANAGEMENT ADVICE: Analysis of trends in recruitment, age structure and landings.

Current management measures for Divisions VIIe–k also apply to cod in Divisions VIIbc. Similarly the TAC is set for Divisions VIIb–k, Subareas VIII, IX, X, and CECAF 34.1.1. Within this larger area there is no control over where the catches are taken.

The assessment area covers Divisions VIIe–k and the ICES advice applies to these areas only.

If it is necessary to calculate a TAC for Sub-area VII - excluding Divisions VIIa and VIId - and including Sub-areas VIII, IX and X, then 1,000 t representing the average catches from the non-assessed areas should be added to the proposed TAC for Divisions VIIe–k.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Undefined	
	F_{msy}	Undefined	
Precautionary Approach	B_{lim}	6300 t	$B_{lim} = B_{loss}$ (B76), the lowest observed spawning-stock biomass.
	B_{pa}	8800 t	$B_{pa} = B_{lim} * 1.4$. Biomass above this value affords a high probability of maintaining SSB above B_{lim}, taking into account the variability in the stock dynamics and the uncertainty in assessments.
	F_{lim}	0.90	The fishing mortality estimated to lead to potential collapse.
	F_{pa}	0.68	F_{pa} = 5th percentile of F_{loss}. This F is considered to have a high probability of avoiding F_{lim} and maintaining SSB above B_{pa} in the medium term (assuming normal recruitment), taking into account the uncertainty assessments.

STOCK STATUS:

F (Fishing Mortality)			
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

SSB (Spawning Stock Biomass)			
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The state of the stock is uncertain. More than 80% of the landings consists of 3 age groups (1–3) over the available time series. Therefore the stock is highly dependent on incoming recruitment. The total mortality appears to be very high.

RECENT MANAGEMENT ADVICE:

Advice summary for 2011

Management Objective (s)	**Catches in 2011**
Transition to an **MSY approach** with caution at low stock size	Catch and effort reduction
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Catch and effort reduction
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	

Outlook for 2011

The available information on landings, cpue, surveys, and stock structure are inadequate to establish reliable assessments and evaluate stock trends. Therefore, fishing possibilities cannot be forecasted.

MSY considerations

The underlying data do not support the provision of absolute estimates of F_{msy}. However it is likely that current F is above F_{msy}. Therefore, fishing effort of fisheries catching cod and catches of cod should be reduced, but it is not possible to determine the appropriate scale of such reduction.

PA considerations

Based on precautionary considerations fishing effort of fisheries catching cod and catches of cod should be reduced although it is not possible to determine the appropriate scale of such reduction.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 7 because the state of the stock not known precisely but the advice is to reduce fishing effort. Under this category the 2010 TAC should be reduced by 15% to 3420 t in 2011.

STECF COMMENTS:

STECF agrees with the ICES assessment that the state of the stock is unknown.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that cod in Division VIIe-k falls under Category 7. Accordingly STECF notes that the rules (rule 1 Annex IV) for the above category imply a TAC reduction of up to 15% as there is evidence that the stock if overfished with respect to F_{msy}. In the absence of an appropriate F_{msy} estimate and analytical assessment STECF is unable to calculate the 2011 catches.

STECF **recommends** that given the apparent poor state of the cod stock in VIIe-k and potential displacement of effort from areas with existing effort control regimes a long-term management plan, which includes provision for stock recovery should be developed and implemented.

3.4. Haddock (*Melanogrammus aeglefinus*) in Division VIIa (Irish Sea)

FISHERIES: The haddock stock is mainly confined to the western Irish Sea where important mixed-species fisheries for *Nephrops*, whiting and cod take place. A directed fishery developed for haddock during the 1990s. Large catches of haddock are taken in the *Nephrops* fishery during periods of high haddock abundance. A directed fishery for mature haddock in spring, using pelagic trawls and whitefish otter trawls, has been curtailed since 2000 by the cod spawning closure. Fishing effort of these vessels has been redirected to surrounding regions, and some vessels switched to using *Nephrops* trawls to take advantage of the derogation for *Nephrops* fishing during the closure. The current directed fishery for haddock in the Irish Sea is likely to generate by-catches of cod in the same area. Between 1984 and 1995 landings ranged from about 400 t to 1,750 t and then increased to 3,000 t in the late 1990s. Landings have since declined to about 674 t in 2003, remained at that low level until 2006 but rose to approximately 1,000 t in 2007-09. Official landing reports may substantially underestimate the true removal by the fishery although legislation introduced by the UK and Ireland has potentially improved the quality of landings data in 2006 and 2007.Discard sampling levels have increased in recent years. The highly variable and very large estimates of discarding for this fishery that have been observed previously are still evident.

Due to the by-catch of cod in the haddock fishery, the regulations affecting Division VIIa haddock remain linked to those implemented under the Irish Sea cod recovery plan. The extent to which fishing mortality may have been reduced in 2005 by management measures such as effort limitation and decommissioning of vessels in 2003 could not be reliably evaluated.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. An assessment was carried out based on survey information only and is considered to be indicative of trends only. Both total mortality and SSB estimates are relative as survey catchabilities at age are not known.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY	MSY $B_{trigger}$	Not defined	

Approach	F_{msy}	Not defined	
Precautionary Approach	B_{lim}	Not defined	
	B_{pa}	Not defined	
	F_{lim}	Not defined	
	F_{pa}	0.5	ICES proposed that F_{pa} be set at 0.5 by association with other haddock stocks.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The state of the stock is uncertain. The assessment is indicative of trends only. Stock trends indicate an increase in SSB over the time-series but a decrease since 2008. The 2009 year class appears to be above average. The SSB is expected to remain at current levels or increase due to this. Total mortality appears relatively stable.

RECENT MANAGEMENT ADVICE:

Advice Summary for 2011

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Effort should be decreased, reduce discard rates
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Effort should not be allowed to increase
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	

Outlook for 2011

Given that the current assessment is indicative of trends only and fishing mortality is unknown, it has not been possible to conduct a short-term forecast of catches.

MSY approach

SSB is fluctuating widely considering the full time series. The underlying data do not support the provision of estimates of F_{MSY}. However it is likely that current F is above F_{MSY} at the current selection pattern. Therefore, effort in fisheries that catch haddock should be reduced.

Management by TAC is inappropriate for this stock because landings – but not catches – are controlled. Management measures should be introduced in the Irish Sea to reduce discarding of small haddock in order to maximize their contribution to future yield and SSB.

PA considerations

There are no signs of impaired recruitment at recent catch levels. Therefore there should be no increase in effort relative to 2010.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 9 (state of the stock is not known precisely but SSB is decreasing). The SSB in the last 2 years is 46% lower than the SSB in the 3 years previous to that. This category would result in a TAC decrease of up to 15%.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that haddock in Division VIIa falls under Category 9. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 1,210 t based on a 15% reduction according to rule 5b (Annex IV) and a commensurate decrease in effort. Invoking rule 1 (Annex IV) which receives precedence is not possible in the absence of an analytical assessment, but would result in a 15% or less reduction in the TAC. However, it is important to note that catches are mainly from a by-catch fishery so that such management measures will impact the exploitation of other stocks. A suitable solution is a reduction in the effort of the fleets and an exemption from the effort regulations to those operators able to demonstrate a more appropriate selection pattern to ensure gadoid by-catch is minimised in fisheries targeting other species.

3.5. Haddock (*Melanogrammus aeglefinus*) in Division VIIb-k (Celtic Sea and West of Ireland)

FISHERIES: In this area, haddock is taken in mixed fisheries along with cod, whiting, plaice, *Nephrops*, sole and rays. Most catches come from otter trawlers, mainly from France and Ireland. The TAC has not been restrictive for haddock. Landings peaked at about 11,000 t in 1997 and have fluctuated between about 5,000 t and 8,000 t since then. In 2009, total ICES estimated (preliminary) landings amounted to 10,000 t from an estimated total catch of 17,100 tonnes.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. The basis of its advice is and age-based analytical assessment (XSA) including dicard data and two survey and two commercial tuning series.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	Not defined	
Precautionary Approach	B_{lim}	Not defined	
	B_{pa}	Not defined	
	F_{lim}	Not defined	
	F_{pa}	Not defined	

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The assessment is indicative of trends only. SSB shows an increasing trend over the time series. Recruitment is highly variable and in the past the SSB and catches have increased after good recruitment. Recruitment of the 2009 year class appears to be exceptionally good. However it is likely that many of these fish will be discarded before they are of a marketable size.

RECENT MANAGEMENT ADVICE:

Advice Summary for 2011

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Effort should not be allowed to increase, reduce discard rates
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Effort should not be allowed to increase
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

Outlook for 2011

Recruitment in 2009 appears to be well above average. Catches and SSB are likely to increase in 2011 but discard levels in 2010 and 2011 are likely to increase as the 2009 cohort enters the fishery. Due to uncertainty of the absolute value of the 2009 recruitment, unpredictable future recruitment and future discard rates, fishing possibilities cannot be forecasted.

MSY considerations

The SSB shows an increasing trend. The underlying data do not support the provision of estimates of F_{msy}. However it is likely that recent F is above F_{msy}at the current selection pattern. Therefore, effort in fisheries that catch haddock should not be allowed to increase.

Management by TAC is inappropriate for this stock because landings – but not catches – are controlled.

Recruitment in 2009 appears to be well above average and catches and SSB are likely to increase in 2011 if effort remains constant. Technical measures to minimise discards should be considered with urgency. ICES advises that the a square mesh panel of at least 120 mm should be introduced for the *Nephrops* fleet and a minimum mesh size of at least 100 mm with a square mesh panel of at least 110 mm for all other fleets.

PA considerations

Future catches and SSB will be highly dependent on the strength of incoming year classes and their discard mortality. With the higher incoming recruitment of the 2009 year class, the stock should be managed by ensuring that fishing effort is not allowed to increase.

Policy paper

In the light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 8 (state of the stock is not known precisely but SSB is increasing). The SSB in the last 2 years is 36% higher than the SSB in the 3 years previous to that. This category would result in a TAC increase of 15%. However Annex IV (rule 1) may apply because it is likely that the stock is overfished.

STECF COMMENTS:

STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that haddock in Division VII b-k falls under Category 8. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 13,320 t based on 15% increase in the TAC under rule 5a in Annex IV.

In addition, ICES considers that there is evidence indicating F > F_{msy} which would suggest an up to 15% decrease should be implemented in the absence of an F_{msy} estimate an appropriate TAC cannot be calculated. However STECF considers the evidence subjective and given that a decrease in the TAC is unlikely to have the desired result of reducing F, as it will simply increase discarding in this mainly bycatch fishery, a decrease in the TAC would be ineffective. This is especially pertinent in 2011 where biomass is expected to rise further on the basis of the exceptional 2009 year class. A large percentage of these fish are unlikely to be of legal / marketable size so that the most likely outcome will be further increases in the discard rate. A suitable solution may be a reduction in the effort of the fleets and an exemption from the effort regulations to those operators able to demonstrate a more appropriate selection pattern to ensure gadoid by-catch is minimised in fisheries targeting other species.

3.6. Saithe (*Pollachius virens*) in Div´s VII, VIII, IX, X

ICES provides no advice on the status of this stock, so STECF concludes that the status of the stock is unknown.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Saith in Division VII-X falls under Category 11. Accordingly STECF notes that the rules for the above category imply a TAC should be adjusted to recent real catch levels, but should not be allowed to change by more than 15%. STECF is unable to calculate this value in the absence of landings information.

3.7. Whiting (*Merlangius merlangus*) in VIIa (Irish Sea)

FISHERIES: Whiting is taken mainly as a by-catch in mixed-species otter trawl fisheries for *Nephrops*, cod, and other demersal species. Landings of whiting by all vessels, and discards of whiting estimated for *Nephrops* fisheries, have declined substantially. From 1989 to 2006, reported landings declined from 11,300 t to less than 100 t. Reported landings in 2009 were 90 t. Only EU vessels exploit the stock, with the UK and Ireland accounting for the majority of the landings, with much smaller quantities landed by Belgium and France. Due to the low value of the catch, a high proportion of whiting are discarded. Reports of significant under-reporting of landings indicate that the current implementation of the TAC system is not able to restrict fishing.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. Advice is based on survey information only and is considered to be indicative of trends only

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Undefined	
	F_{msy}	Undefined	
Precautionary Approach	B_{lim}	5 000 t	$\mathbf{B}_{loss}$(1998), The lowest observed SSB as estimated in previous assessment. There is no clear evidence of reduced recruitment at the lowest observed SSBs.
	B_{pa}	7 000 t	$\mathbf{B}_{loss}$ * 1.4: Considered to be the minimum SSB required to ensure a high probability of maintaining SSB above its lowest observed value, taking into account the uncertainty of assessments.
	F_{lim}	0.95	The fishing mortality above which stock decline has been observed.
	F_{pa}	0.65	This F is considered to have a high probability of avoiding $\mathbf{F}_{lim}$. It implies an equilibrium SSB of 10.6 kt, and a relatively low probability of SSB < $\mathbf{B}_{pa}$ (= 7 kt), and is within the range of historic Fs.

STOCK STATUS

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The state of the stock is uncertain. Long-term information on the historical yield and catch composition indicate that the present stock size is extremely low. Landings have seen a declining trend since the early 1980s, reaching lowest levels in the 2000s. The survey results indicate a decline in relative SSB. There are conflicting recruitment signals between surveys. Total mortality has been variable with some conflicting signals between surveys over time.

RECENT MANAGEMENT ADVICE:

Advice summary for 2011

Management Objective (s)	**Catches in 2011**
Transition to an **MSY approach** with caution at low stock size	Catches (mainly discards) should be reduced
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Reduce catches to the lowest possible level
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

Outlook for 2011

It was not possible to carry out an analytical assessment for this stock and no forecasts can be made.

MSY approach

SSB has declined to a very low level. The underlying data do not support the provision of estimates of F_{msy}. However it is likely that current F is above F_{msy}. Therefore, catches (mainly discards) of whiting should be reduced.

Management by TAC is inappropriate for this stock because landings – but not catches – are controlled. Further management measures should be introduced in the Irish Sea to reduce discarding of small whiting in order to maximize their contribution to future yield and SSB.

PA considerations

ICES considers that catches should be reduced to the lowest possible levels in 2011.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 10 because ICES advises to reduce catches to lowest possible levels. This equates to a reduction in TAC by 25%. The resulting TAC would be 118 t.

STECF COMMENTS:

STECF agrees with the ICES assessment that the state of the stock is uncertain and that catches in 2011 should be reduced.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that whiting in Division VIIa falls under Category 10. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 118 t on the basis of a 25% TAC reduction recovery measures should be implemented including effort reductions and introduction of more selective fishing gear.

STECF notes that the high level of discard and under-reporting of landings indicates that the current TAC and quota system is inefficient in regulating fishing mortality. STECF therefore **recommends** that the TAC system is supplemented with enhanced control measures to reduce unreported landings and measures reducing discards.

3.8. Whiting (*Merlangius merlangus*) in VIIb-k

There is a mismatch between management area and assessments units. Whiting in VIIe-k is assessed as one stock, VIId whiting are included in the North Sea whiting and whiting from b--c is not included in any assessment.

FISHERIES: Celtic Sea whiting are taken in mixed fisheries along with cod, whiting, hake, *Nephrops*. French trawlers account for about 60% of the total landings, Ireland takes about 30%, and the UK (England and Wales) 7%, while Belgian vessels take less than 1%. Catch levels peaked in the late nineties with over 23,000 t reported by ICES and subsequently declined to less than 10,000 t in 2006. Landings in 2009 were less than 4000t, but these figures do not include French data unavailable at the time of the assessment.

There is substantial discarding above the minimum landing size due to economic or other factors.

Management regulations, particularly effort control regimes in other areas (VIIa, VI, & IV), became increasingly restrictive in 2004 and 2005 and resulted in a displacement of effort into the Celtic Sea.

Since 2005, ICES rectangles 30E4, 31E4, and 32E3 have been closed during the first quarter (Council Regulations 27/2005, 51/2006, 41/2007 and 40/2008) with the intention of reducing fishing mortality on cod. The effects of the closure on whiting are not known although there have been spatial and temporal changes in the distribution of effort.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. Age based analytical assessment (XSA) using 2 survey and 3 commercial tuning series. However the assessment is considered for trends only, mainly due to the lack of discard information.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Undefined	
	F_{msy}	Undefined	
Precautionary Approach	B_{lim}	15 000 t	**B**loss, the lowest observed spawning-stock biomass.
	B_{pa}	21 000 t	$\mathbf{B}_{pa} = \mathbf{B}_{lim} * 1.4$. Biomass above this affords a high probability of maintaining SSB above $\mathbf{B}_{lim}$, taking into account the uncertainty of the assessment.
	F_{lim}	Undefined	
	F_{pa}	Undefined	

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The state of the stock is uncertain and the assessment is indicative of trends only. The stock is estimated to have declined since the mid 1990's and has recently increased to the long term average. Fishing mortality estimates

are variable and recent trends suffer in precision due to lack of discard data in the assessment. Surveys indicate that the 2008 year class may be strong.

RECENT MANAGEMENT ADVICE:

Advice summary for 2011

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Effort should not be allowed to increase, reduce discard rates
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Effort should not be allowed to increase
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	

Outlook for 2011

This is a trends based assessment and no forecasts can be made.

MSY approach

The SSB estimates show an increase since 2007. The underlying data do not support the provision of estimates of F_{msy}. However it is likely that recent F is above F_{msy} at the current selection pattern. Therefore, effort in fisheries that catch whiting should not be allowed to increase.

Management by TAC is inappropriate for this stock because landings – but not catches – are controlled. Recruitment in 2008 appears to be above average and catches and SSB may increase in 2011 if effort remains constant. Technical measures to minimise discards should be considered with urgency. ICES advises that the a square mesh panel of at least 120 mm should be introduced for the *Nephrops* fleet and a minimum mesh size of at least 100 mm with a square mesh panel of at least 110 mm for all other fleets.

PA considerations

The current estimates of fishing mortality and SSB are uncertain, but SSB shows an increasing trend since 2007. ICES considers that fishing effort should not be allowed to increase in fisheries that catch whiting in 2011.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 8 (State of the stock is not known precisely but SSB is increasing). SSB estimates in the last 2 years are 70% higher than the SSB in the previous 3 years. This category would result in a TAC increase of 15% (16 568 t). However Annex IV.1 may apply because it is likely that the stock is overfished with regards to F_{msy}.

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that whiting in Division VII b-k falls under Category 8. Accordingly STECF notes that Annex IV rule 5a applies to this category implying a 15% TAC increase for the e-k component.

Advice for whiting in area VIId (part of this management unit) implies a *status quo* TAC for that unit. As landings from the two sub-areas are approximately equal this would suggest a 7.5% increase in the TAC to 15,490 for the management unit VII b-k.

In addition STECF notes ICES suggests that $F > F_{msy}$ which could be used to invoke rule 1 (Annex IV) resulting in a reduction in the TAC but not estimate of an appropriate F_{msy} is available. In any case, as the majority of whiting are discarded, a decrease in TAC will have little impact in moving the fishery towards F_{msy} and yet reduce yields further. A suitable solution is a reduction in the effort with a possible exemption from the effort

regulations to those operators able to demonstrate a more appropriate selection pattern to ensure gadoid by-catch is minimised in fisheries targeting other species.

3.9. Anglerfish (*Lophius piscatorius & Lophius budegassa*) in Div. VII

Anglerfish within the two management areas VII and VIII a,b,d,e are assessed together and comprise of two species (*Lophius piscatorius & Lophius budegassa*) which are not always separated for market purposes. The management area for this stock also includes the Irish Sea (VIIa) where catches since 1995 have been between about 300t and 1,300 t, (330 t officially reported in 2007). These catches are not included in the assessment.

FISHERIES: The trawl fishery for anglerfish in the Celtic Sea and Bay of Biscay developed in the 1970s. Anglerfish are also taken as a by-catch in other demersal fisheries in the area. Landings of both species have fluctuated over the last 20 years. Landings of *L. piscatorius* have declined steadily from 23 700 t in 1986 to 12 800 t in 1992, then increased to 22 100 t in 1996 and declined to 14 900 t in 2000. The landings have increased since then reaching the maximum of the time series in 2007 (29 700 t). In 2008, landings were 24,600t. Landings of *L. budegassa* have fluctuated all over the studied period between 5 700 t to 9 600 t with a succession of high (1989-1992, 1998 and 2003) and low values (1987, 1994 and 2001). The total estimated landings for 2008 is 7,500 t. Only partial landings data are available for 2009.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. Lacking an analytical assessment the advice is based on survey data and catch information.

REFERENCE POINTS: There are no reference points defined for these stocks. As a consequence of recently identified problems with growth estimates, previous reference points are not considered to be valid.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The assessment is indicative of trends only. Survey data (biomass and abundance indices, length distribution) give indication that the biomass of both species has been increasing as a consequence of the good recruitment and has stabilized in recent years with the exception of *L. budegassa* in 2009). There is evidence of a strong incoming recruitment from 2008 and 2009 in case of *L. piscatorius*. In case of *L. budegassa* one survey suggests below average recruitment while another indicates locally increased recruitment.

RECENT MANAGEMENT ADVICE:

Management Objective(s)	**Catches in 2011**
Transition to an **MSY approach** with caution at low stock size	Catches should be consistent with no increase in effort
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Catches should be consistent with no increase in effort
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g. catch stability)	n/a

Outlook for 2011

No analytical assessment is available for this stock. The main cause of this is the lack of some data (e.g. discards and landings for 2009) and the low quality of other parameters (ageing). Therefore, no forecast can be presented

MSY approach

The stocks are stable or increasing over the whole time series, the effort trends are stable for the last 10 years and the lpues studied are stable or increasing. The exploitation status is unknown. Therefore, fisheries should be maintained at recent catch levels. Because the catch levels are not known (only landings) this cannot be quantified. Therefore, effort in fisheries that catch anglerfish should not be allowed to increase.

PA considerations

There are no signs of impaired recruitment at recent catch levels. Therefore the advice is that effort in fisheries that catch anglerfish should not be allowed to increase.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 8 because of increase in abundance. For *L.piscatorius*, the average of the biomass index for 2008–2009 is 8% below the average of the three preceding years and Annex IV.4 would imply no change in TAC. For *L.budegassa*, the average of the biomass index for 2008–2009 is 41% above the average of the three preceding years and Annex IV.5.a would imply a 15% TAC increase. There is a single TAC for both species combined.

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that anglerfish in Division VII falls under Category 6. This is in contrast to the ICES advice classifying the stock as 8. The reasons for the ICES classification are unclear to STECF, as the species making up the majority of the landings is made up *of L. piscatorius* which has been assessed as declining by 8%. In addition, *L. budegassa* appears to be decreasing in 2009 having reached its peak so that the 41% increase in SSB is an artefact of the methodology of calculating trends in SSB and not a reflection of the current state of the stock. Accordingly STECF notes that the rules for the above category imply an unchanged TAC in 2011 of 32,292 t noting that the TAC had been increased from 28,080 t in 2010 for angler fish in Division VII.

The management area for this stock also includes the Irish Sea (VIIa) but the catches of the Irish Sea are not included in the assessment.

3.10. Megrim (*Lepidorhombus whiffiagonis and Lepidorhombus boscii*) in VII and VIIIabde.

Megrim in management areas VII and VIIIabde are assessed as a single stock.

FISHERIES: Megrim to the west of Ireland and Britain and in the Bay of Biscay are caught predominantly by Spanish and French vessels, which together have reported more than 60% of the total international landings, and by Irish and UK demersal trawlers. Megrim is mostly taken in mixed fisheries for hake, anglerfish, *Nephrops*, cod, and whiting. Over the period 1984 to 2003, annual catches as estimated by ICES have been between 15,500 t t to 21,800 t. In 2005 and 2006, catches dropped to 14,500 t. In 2007, catches were at 15,600 t. In 2008, catches decreased again to 12,700 t, well below the TAC with 2009 landings being unavailable. Discards have been estimated to vary between 1,100 t and 5,400 t.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. Advice is based on trend analysis of cpue and survey indices.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	Not defined	

Precautionary Approach	B_{lim}	Not defined	
	B_{pa}	55 000 t	= B_{loss}. There is no evidence of reduced recruitment at the lowest biomass observed and B_{pa} was therefore set equal to the lowest observed SSB.
	F_{lim}	0.44	= F_{loss}.
	F_{pa}	0.30	= F_{med}; this implies a less than 45% probability that (SSB_{MT}< B_{pa}).

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

There is no analytical assessment. However, surveys and commercial data indicate that the stock has been rather stable over the time-series. The perception of the stock has not changed.

RECENT MANAGEMENT ADVICE:

Advice for 2011

Management Objective (s)	**Catches in 2011**
Transition to an **MSY approach** with caution at low stock size	Catch and effort reduction
Cautiously avoid impaired recruitment (**Precautionary Approach**)	No increase in catch and effort
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

Outlook for 2011

No analytical assessment is available for this stock. The main cause of this is poor data quality. Therefore, no forecast can be presented.

MSY considerations

Because the stock size is fluctuating without trend, and the exploitation level is unknown, the catch should be reduced from the recent level. Because the catch levels are not known accurately (only landings and partial discard data) this cannot be quantified. Therefore, effort in fisheries that catch megrim should be reduced.

PA considerations

There is no sign of impaired recruitment at the recent levels of catches and effort. Therefore, effort in fisheries that catch megrim should not be allowed to increase.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 7 because the state of the stock is not known precisely and effort should be reduced. This would result in a TAC reduction of up to 15%.

However, Annex IV.4 could also be considered to apply because considering the precautionary approach there is no change in stock abundance. This would result in a stable TAC, but it should be noted that the TAC has not been restrictive in most years.

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown and that catches and effort should be reduced.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that megrim in Division VIIb-k and VIIIa,b,d falls under Category 6. This is in contrast to the ICES classification (7), as there is insufficient evidence to support the statement: *"Because the stock size is fluctuating without trend, and the exploitation level is unknown, the catch should be reduced from the recent level. "* However consideration of the same rules under either classification makes the difference in opinion inconsequential. In either case rule 4 applies suggesting an unchanged TAC of 20,400t should apply. However STECF notes that the TAC has not been limiting and a 15% reduction in the TAC would be more in line with the precautionary and MSY approaches.

3.11. Plaice (*Pleuronectes platessa*) in Division VIIa (Irish Sea)

FISHERIES: Plaice are taken mainly in long-established UK and Irish otter trawl fisheries for demersal fish. They are also taken as a by-catch in the beam trawl fishery for sole. The main fishery is concentrated in the northeast Irish Sea. Catches are predominantly taken by the UK, Belgium and Ireland, with smaller catches by France and at the end of the 1990s by The Netherlands. Landings were sustained between 2,900 t and 5,100 t from 1964-1986. Landings declined from the 1987 peak of 6,200 t to between 1,100-1,500 t from 1999-2005, well below the agreed TAC. Landings in 2009 are the lowest in the time series at 460 t much lower than the current TAC.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on survey trends only.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	Not defined	
Precautionary Approach	B_{lim}	Not defined	There is no biological basis for defining B_{lim} as the stock–recruitment data are uninformative.
	B_{pa}	3100 t	$B_{pa} = B_{loss}$.
	F_{lim}	Not defined	There is no biological basis for defining F_{lim} as F_{loss} is poorly defined.
	F_{pa}	0.45	$F_{pa} = F_{med}$ in a previous assessment, and in long-term considerations. This is considered to provide a high probability of maintaining SSB above B_{loss} in the long term.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	⊕	⊕	⊕

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?

Precautionary approach (B_{pa},B_{lim})	⊕	⊕	⊕

The assessment is indicative of trends only. The SSB trends show an increase in stock size since the mid-1990s to a stable level. Total mortality shows a declining trend since the early 1990s.

RECENT MANAGEMENT ADVICE:

Advice summary for 2011

Management Objective (s)	**Catches in 2011**
Transition to an **MSY approach** with caution at low stock size	Effort should be consistent with no increase in catches
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Effort should be consistent with no increase in catches
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

Outlook for 2011

No reliable forecast can be presented for this stock. The main cause of this is the retrospective bias and lack of discard information in the assessment.

MSY approach

There is an increase in survey indices and the exploitation status is unknown, catches should be no higher than recent level. Because the catch levels are not known accurately (substantial discards) this cannot be quantified. Therefore, effort in fisheries that catch plaice should be restricted to make sure catches are not allowed to increase.

PA considerations

The available information is inadequate to evaluate spawning stock or fishing mortality relative to precautionary boundaries. The effort in the fisheries that catch plaice should not be allowed to increase.

Policy paper

Following the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 8 (state of the stock is not know precisely but biomass indices are increasing). This implies a TAC increase of up to 15% (up to 1383 t).

STECF COMMENTS: STECF agrees with the ICES comments on trends in SSB and fishing mortality.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that plaice in Division VIIa falls under Category 8 implying a 15% increase in the TAC to 1871 t. However STECF notes that there is large scale discarding of plaice in the fisheries on the basis of size. In addition the TAC is not restrictive (landings in 2009 were 460 t out of a TAC of 1,627 t). Further increases in the TAC may allow future over exploitation. A reduction in the TAC to bring it more in line with current landings would increase the potential for effective future management if the discard issues can be resolved.

STECF advises that in the absence of a quantitative estimate of an appropriate catch level for 2011, fishing effort should not increase.

3.12. Plaice (*Pleuronectes platessa*) in the Celtic Sea (Divisions VIIf and g)

FISHERIES: The fishery for Celtic Sea plaice involves vessels from France, Belgium, England and Wales and Ireland. In the 1970s, the VIIfg plaice fishery was mainly carried out by Belgian beam trawlers and Belgian and UK otter trawlers. Effort in the UK and Belgian beam-trawl fleets increased in the late 1980s but has since declined. Recently, many otter trawlers have been replaced by beam trawlers, which target sole. Landings increased in the late eighties to its record high (2100t) and have declined since.

Currently the main fishery occurs in the spawning area off the north Cornish coast, at depths greater than 40 m, about 20 to 25 miles offshore. Although plaice are taken throughout the year, the larger landings occur during February–March after the peak of spawning, and again in September. Recent increases in fuel costs are thought to have restricted the range of some fleets and may have resulted in a reduction in effort in Divisions VIIf,g.

Since 2000 the estimated landings have been below the TACs, and lowest catch levels of 389 t were recorded in 2005. Nevertheless, according to the catch forecast the predicted landings in 2009 were 460 t slightly above the TAC.

Plaice in the Bristol Channel and Celtic Sea (ICES Divisions VIIf and VIIg) is managed by TAC and technical measures. Technical measures in force for this stock are minimum mesh sizes, minimum landing size, and restricted areas for certain classes of vessels. Technical regulations regarding allowable mesh sizes for specific target species, and associated minimum landing sizes, came into force on 1 January 2000. The minimum landing size for plaice in Divisions VIIf,g is 27 cm.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based on landings, one survey index, and two commercial CPUE series. There is a retrospective bias of overestimation of SSB and underestimation of fishing mortality. Recent forecasts for this stock have been overly optimistic.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	1800 t	Default Bpa
	F_{msy}	0.19	Provisional proxy as the stochastic simulations including Beverton&Holt stock recruit relation.
Precautionary Approach	B_{lim}	1100 t	B_{lim}=$B_{loss,}$ the lowest observed spawning-stock biomass.
	B_{pa}	1800 t	B_{pa}= B_{lim} * 1.64. Biomass above this affords a high probability of maintaining SSB above B_{lim}, taking into account the uncertainty of assessments.
	F_{lim}	Not defined	
	F_{pa}	Not defined	

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	⛔	⛔	⛔
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	⛔	⛔	⛔
Precautionary approach (B_{pa},B_{lim})	⛔	⛔	⛔

SSB peaked in 1988–1990, following a series of good year classes, then declined rapidly and has since 2002 been below or around B_{lim}. Fishing mortality estimates have declined since 2004, but are likely to be underestimates. Recruitment was relatively high in most years during the 1980s, but has been lower since then.

RECENT MANAGEMENT ADVICE:

Outlook for 2011

Advice Summary for 2011

Management Objective (s)	Landings in 2011
Transition to an **MSY approach** with caution at low stock size	Less than 390 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 150 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

MSY approach

Following the ICES MSY framework implies fishing mortality to be reduced to 0.14 (25% lower than F_{msy} because SSB is 25% below Btrigger), resulting in landings of 210 t in 2011. This is expected to lead to an SSB of 1740 t in 2012.

Following the transition scheme towards the ICES MSY framework implies fishing mortality to be reduced to ((0.44*0.8)+(0.19*0.2)) = 0.39 with an additional 25% reduction because SSB is 25% below MSY $B_{trigger}$ which leaves a target F of 0.29, resulting in landings of less than 390 t in 2011. This is expected to lead to an SSB of 1570 t in 2012.

The EU transition scheme without extra reduction on account of low SSB implies a target F of 0.39. This results in landings of less than 500 t in 2011. This is expected to lead to an SSB of 1460 t in 2012.

PA approach

Fishing mortality in 2011 should be no more than 0.10 corresponding to landings of less than 150 t in 2011. This is expected to bring SSB above B_{pa} in 2012.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 3: Stock is outside safe biological limits. The category requires the highest landings from (a) fishing at F_{msy} (0.19; 270 t) or (b) the largest reduction in F from 0.7 F_{sq} (0.31; 410 t) or (0.25 * (F_{sq} - F_{msy}) (0.31; 410 t). Consequently fishing mortality should be reduced to 0.31 resulting in landings of 410 t in 2011.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that plaice in Division VIIf,g falls under Category 3. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 410 t based on a 30% reduction in fishing mortality in 2011 compared to 2010.

Given that the stock is outside safe biological limits, STECF **recommends** that landings of plaice from Divisions VII f, g in 2011 should be no more than 390 t, in line with the fishing mortality consistent with the ICES MSY transition scheme.

The high level of discarding indicated in this mixed fishery would suggest a mis-match between the mesh size employed and the size of the fish landed. Increases in the mesh size of the gear should result in fewer discards and, ultimately, in increased yield from the fishery. The use of larger mesh gear should be encouraged in this fishery in instances where mixed fishery issues allow for it.

3.13. Plaice (*Pleuronectes platessa*) in Divisions VIIe (Western English Channel)

FISHERIES: The fisheries taking plaice in the Western Channel mainly involve vessels from the bordering countries: the total landings (2008) are split among UK vessels (80%), France (12%), and Belgium (8%). Landings of plaice in the Western Channel were low and stable between 1950 and the mid-1970s, and increased rapidly

during 1976 to 1988 as beam trawls began to replace otter trawls, although plaice are taken mainly as a by-catch in beam-trawling directed at sole and anglerfish. Estimated landings have been fairly stable since 1994. Landings have continued to decrease in recent years to a similar low level as in the late-1970s. The main fishery is south and west of Start Point. Although plaice are taken throughout the year, the larger landings are made during February, March, October, and November. WKFLAT 2010 indicated that in addition to the landings in VIIe the stock suffers considerable fishing mortality in the first quarter in division VIId during their annual spawning migration.

The TAC for plaice in the English Channel is set for Divisions VIId,e combined.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on an age-based assessment using commercial and survey data.

REFERENCE POINTS:

	Type	***Value***	***Technical basis***
MSY Approach	MSY $B_{trigger}$	2500 t	Bpa
	F_{msy}	0.19	Provisional proxy by analogy with plaice in the Celtic Sea. Fishing mortalities in the range 0.14 – 0.31are consistent with F_{msy}
Precautionary Approach	B_{lim}	1300 t	B_{lim}=B_{loss}. The lowest observed spawning stock biomass.
	B_{pa}	2500 t	MBAL, biomass above this affords a high probability of maintaining SSB above B_{lim}, taking into account the uncertainty in assessments.
	F_{lim}	Not defined.	
	F_{pa}	0.45	This F affords low probability that (SSB_{MT}< B_{pa}).

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	⊖	⊖	⊖
Precautionary approach (F_{pa},F_{lim})	⊖	⊖	o

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	⊖	⊖	⊖
Precautionary approach (B_{pa},B_{lim})	o	o	o

The large reduction of F in 2009 reflects the reduction in fishing effort. SSB is around the lowest observed values in the time series. Current recruitment levels are lower than those observed in the 1980s.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Less than 890 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 980 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

Outlook for 2011

MSY approach

Following the ICES MSY framework implies fishing mortality to be reduced to 0.18 (7% lower than F_{msy} because SSB is 7% below MSY $B_{trigger}$), resulting in landings of 480 t in 2011. This is expected to lead to an SSB of 2980 t 2012

Following the transition scheme towards the ICES MSY framework implies fishing mortality to be reduced following ($0.8*F(2010)+0.2F_{msy}$) = 0.39 with an additional 7% reduction because SSB is 7% below MSY $B_{trigger}$, which implies an F of 0.36 for 2011 (89% higher than F_{msy}). This results in landings of 890 t in 2011. This is expected to lead to an SSB of 2 580 t in 2012.

The (EU) transition scheme without extra reduction on account of low SSB implies a target F of 0.39. This results in landings of 940 t in 2011. This is expected to lead to an SSB of 2530 t in 2012.

PA approach

The fishing mortality in 2011 should be no more than 0.4 corresponding to landings of less than 980 t in 2011. This is expected to bring SSB above B_{pa} in 2012.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 3: The stock is outside safe biological limits. This implies a 30% reduction if F in 2011 which results in a TAC of 780 t producing an SSB of 2690 t in 2012. It is not possible to determine the associated change in TAC with any of the scenarios provided in the options table, as the TAC is set for the combined VIId and VIIe stocks.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that plaice in Division VIIe falls under Category 3. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 780 t for the VIIe component of the VII e,d combined TAC (See also section 1.26 for the VIId TAC component). This is based on a 30% reduction in F in 2011 compared to 2010.

Special request on plaice in VIId,e

Background

Advice provided for plaice in VIIe and for plaice in VIId for 2010 are substantially different, concomitant with the advice that these two stocks are biologically distinct. At present, these two stocks are managed under a single TAC which makes it impossible to independently manage each stock towards precautionary criteria or towards maximum sustainable yield. The Commission is considering proposing the separation of the VIId,e TAC into two separate TACs in order that separate biological objectives can be reached.

Request to STECF

STECF is requested to advise whether such an approach is appropriate to attempt to achieve stock-specific biological objectives and if not, to advise (given current knowledge of stock identities and migrations) on an alternative approach to attaining the same goal.

STECF is requested to deliver its advice in July in the course of its review of ICES advice.

STECF response

STECF notes that benchmark assessments were undertaken for the plaice stocks in VIId and VIIe by the ICES WKFLAT in 2010. WKFLAT examined available data and information on tagging studies to investigate the degree of migration of plaice between VIId, VIIe and sub-area IV.

The results of the investigation indicate that there is significant migration of mature plaice from VIIe and IV into VIId in the first quarter of the year when spawning takes place. Mature plaice undertake a return migration

to their original area by the second quarter of the year. There is no information to indicate that there is migration of mature plaice between divisions at other times of the year.

STECF notes that assessment and advice are provided separately for VIId and VIIe and that because of the different stock status in the two areas, the biological objectives for advice are also different. It would seem logical to conclude that in order to independently control the exploitation rate on both stocks, each area should be subject to different management measures including separate TACs. However, STECF notes that because a proportion of the fishing mortality on the VIIe stock occurs in VIId during the spawning season, the setting of separate TACs alone will not necessarily limit the fishing mortality on VIIe plaice to the intended level. At the same time, fishing mortality on plaice in VIId is likely to be less than intended, since removals from VIId in the 1st quarter will consist of a significant proportion of fish from VIIe and IV.

STECF therefore advises that while it would be appropriate to limit the fishing mortality on the stock of plaice in VIId and VIIe independently, measures in addition to separate TACs would be required. Such measures should be designed to restrict the catch of plaice originating from VIIe and IV but caught in Q1 in VIId.

Allocation of TACs for plaice in 2011 to Divisions VIId and VIIe separately

Candidate procedures designed to calculate separate TACs for subarea VIId and VIIe plaice for 2011 while attempting to ensure that the removals from each stock component are consistent with the advised fishing mortality as proposed below:

1. Allocation of TACs to VIIe and VIId separately based on the advised fishing mortality rates for each stock component and in an attempt to ensure that there is no catch of plaice that migrate into VIId from VIIe and IV, Division VIId could be closed in Q1 to all gears likely to catch plaice.

2. Allocation of TACs to VIIe and VIId separately based on the advised fishing mortality rates for each stock component and adjusting the TAC according to the following method:

Based on the assumption that a ***fixed*** percentage of 15% of the quarter 1 (Q1) catches (landings) taken in VIId are actually removed from the VIIe stock and not from the VIId stock since some VIIe fish temporarily residence in VIId area during Q1.

Calculating the respective TACs, as catches (landings) to be removed from the respective stocks based on the intended fishing mortality and assessed stock numbers are referred to as $TAC_{stock}d$ (3400 t = advice VIId)and $TAC_{stock}e$ (890 t = advice VIIe) for stocks VIId and VIIe respectively.

The aim is to arrive at adjusted TACs, representing the allowed catches (landings) to be taken from areas VIId and VIIe respectively, which will be referred to as $TAC_{area}d$ and $TAC_{area}e$.

a. The $TAC_{area}e$ should be a certain amount lower than the $TAC_{stock}e$, to account for the fact that additional catches will be removed from the VIIe stock caught elsewhere than in area VIIe (namely in area VIId).
b. An equivalent amount should be added to the $TAC_{stock}d$ to arrive at an adjusted $TAC_{area}d$, accounting for the fact that, although these catches will be taken in area VIId they will not actually be removed from stock VIId (but instead from stock VIIe).

The amount to be added to the $TAC_{stock}d$ and subtracted from the $TAC_{stock}e$ should be calculated as follows:

a. Whatever amount X caught in Q1 in area VIId, is assumed to consist for 85% of VIId fish and for 15% of VIIe fish.

b. Assuming that catches are always distributed equally over the 4 quarters, X is the amount taken from area VIId in Q1. Therefore, the total amount taken from area VIId for the whole year equals to 4 X.

c. The above assumptions can be expressed as:
    i. $TAC_{area}d = TAC_{stock}d + 0.15\ X$
    ii. $TAC_{area}d = 4\ X$

d. It follows that $TAC_{stock}d = 3.85\ X$, and from that $X = TAC_{stock}d / 3.85$.

e. Substitution in (ii) gives: $TAC_{area}d = (4/3.85) * TAC_{stock}d$

Therefore 3.9% (132 t) of the $TAC_{stock}d$ (3400 t)is the amount that should be added to the $TAC_{stock}d$, and subtracted from $TAC_{stock}e$, to arrive at the adjusted values for $TAC_{area}d$ (3532 t) and $TAC_{area}e$ (758 t) respectively.

With the $TAC_{area}d$ (3532 t) and $TAC_{area}e$ (758 t) set for areas VIId and VIIe respectively, and assuming that the 15% is fixed and that catches are distributed equally over the 4 quarters, the actual removals from the respective stocks VIId and VIIe are expected to be equal to the $TAC_{stock}d$ (3400 t) and $TAC_{stock}e$ (890 t) respectively calculated based on intended F and assessed stock numbers.

Implications for plaice in subarea IV (North Sea)

STECF notes that ICES has estimated from tagging data that approximately 50% the catches from VIId in Q1 also comprises fish from VIId. Hence, following the same rational on the assumption that also a ***fixed*** percentage of 50% of the quarter 1 (Q1) catches (landings) taken in VIId are actually removed from the area IV stock and not from the VIId stock, the extra amount that should be added to the $TAC_{stock}d$, and subtracted from $TAC_{stock}IV$ is 486 t, resulting in a North Sea plaice TAC of 72,914 t (73,400 t – 486 t). The resulting overall adjusted $TAC_{area}d$ for subdivision VIId should therefore be 4018 t (3400 t + 132 t + 486 t).

Using the above procedure to set the TACs for 2011, the adjusted TACs for VIIe, VIId and Subarea IV would be as follows:

	Plaice VIIe	Plaice VIId	Plaice IV
Landings corresponding to STECF advice (stock landings)	890	3,400	73,400
Adjusted landings(area landings)	758	4,018	72,914

3.14. Plaice (*Pleuronectes platessa*) in VIIhjk

FISHERIES: Ireland, UK, France and Belgium are the major participants in this fishery. Plaice are predominantly caught within mixed species otter trawl fisheries in Division VIIj.

Official landings have declined from 790 t in 1998 to 110 t in 2009.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is based on a catch curve through landings-at-age data for plaice in Division VIIjk

REFERENCE POINTS:

	Type	***Value***	***Technical basis***
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	0.24	Provisional proxy based on F_{max}
Precautionary Approach	B_{lim}	Not defined	
	B_{pa}	Not defined	
	F_{lim}	Not defined	
	F_{pa}	Not defined	

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**

MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

There is no accepted analytical assessment for this stock and the state of the stock is unknown. However, exploratory estimates of mortality suggest that recent fishing mortality for the major component of the catch is greater than F_{msy}.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Reduce catches
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Reduce catches
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

Outlook for 2011

No reliable assessment is available for this stock. The main cause of this is the lack of tuning data. Therefore, fishing possibilities cannot be forecasted.

MSY approach

The underlying data do not support the provision of estimates of fishing mortality. However it is likely that recent fishing mortality for the main component of the catch is above F_{msy}. Therefore, catches should be reduced in 2011 until there is more information to facilitate an adequate assessment. ICES cannot quantify the rate of reduction needed.

PA considerations

Catches should be reduced in 2011 until there is more information to facilitate an adequate assessment. ICES cannot quantify the rate of reduction needed.

Policy paper

Following the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 7, since the state of the stock is not known but fishing mortality should be reduced. This implies a TAC reduction of up to 15% in 2011 to 190 t. However, the last paragraph of Annex IV may also apply since the total TAC has not been restrictive.

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that plaice in Division VII h,j,k falls under Category 7.

Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 185 t based on a 15% reduction. STECF also notes the TAC is not restrictive and advice suggests that $F > F_{msy}$ which in the absence of a restrictive TAC could result in a greater than 15% change in the TAC. For example recent average catches in this fishery have been 123 t. Reducing these catches by 15% would suggest a TAC of 105 t, which unlike a 15% reduction in the TAC should result in a reduction of F. However no appropriate F_{msy} proxy is available so the exact change in catches needed to reduce F towards F_{msy} is not known. Prior investigations into the national quota up-take will be required before assessing whether TAC reductions in excess of 15% on the basis of underutilized international TAC will not produce greater than 15% reductions in catches for any one fleet.

3.15. Plaice (*Pleuronectes platessa*) in Division VIIbc

FISHERIES: Ireland is the major participant in this fishery with around 90% of the international landings over the period 1993-2006. Plaice are normally caught in mixed species otter trawl fisheries in Division VIIb. These vessels mainly target other demersal fish species and *Nephrops*. Official landings have declined from 251t in 1996 to 20t in 2009.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.No assessment was carried out for this stock in 2010.

REFERENCE POINTS: No reference points are defined for this stock.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The stock status is unknown and the available catch statistics are not considered reliable indicators of abundance.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	Landings in 2011
Transition to an **MSY approach** with caution at low stock size	n/a
Cautiously avoid impaired recruitment (**Precautionary Approach**)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

Outlook for 2010

The available landing data are not reliable indicators of plaice abundance in Division VIIb,c. Therefore, fishing possibilities cannot be projected.

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that plaice in Division VIIb,c falls under Category 11. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 68 t based on a 15% reduction with no increase in fishing effort due to an underutilized TAC. STECF notes that such TAC reductions based on underutilisation of the international TAC should be investigated at the national level to ensure that it will not produce greater than 15% reductions in catches for anyone fleet.

3.16. Sole (*Solea solea*) in Division VIIa (Irish Sea)

FISHERY: Sole are taken mainly in a beam trawl fishery that commenced in the 1960s and are also taken as a by-catch in the long established otter trawl fisheries. Effort in the Belgian beam trawl fleet increased in the late 1980s as vessels normally operating in the North Sea were attracted into the Irish Sea by better fishing opportunities. In recent years, however, catch rates of sole have been low in the Irish Sea, and part of the beam trawl fleet has moved to other sole fishing grounds. Over the last 30 years, the total landings have been in the order of 1,000 t to 2,000 t. Landings in 2007, 2008 and 2009 were 490 t, 330 t and 320 t respectively.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on an age-based assessment which uses commercial landings data and two scientific surveys.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	3100 t	Default to value of B_{pa}
	F_{msy}	0.16	Provisional proxy based on stochastic simulations assuming a Ricker S/R relationship (range 0.1–0.25)
Precautionary Approach	B_{lim}	2200 t	$B_{lim} = B_{loss}$ The lowest observed spawning stock, followed by an increase in SSB.
	B_{pa}	3100 t	$B_{pa} \sim B_{lim} * 1.4$. The minimum SSB required ensuring a high probability of maintaining SSB above its lowest observed value, taking into account the uncertainty of assessments.
	F_{lim}	0.40	$F_{lim} = F_{loss.}$ Although poorly defined, there is evidence that fishing mortality in excess of 0.4 has led to a general stock decline and is only sustainable during periods of above-average recruitment.
	F_{pa}	0.30	This F is considered to have a high probability of avoiding F_{lim}.

STOCK STATUS:

F (Fishing Mortality)	2007	2008	2009
MSY (F_{msy})	⊖	⊖	⊖
Precautionary approach (F_{pa},F_{lim})	o	o	⊕

SSB (Spawning Stock Biomass)	2008	2009	2010
MSY ($B_{trigger}$)	⊖	⊖	⊖
Precautionary approach (B_{pa},B_{lim})	⊖	⊖	⊖

SSB has continuously declined since 2001 to low levels and reached its lowest level in 2008. The large reduction of F in recent years reflects the reduction in fishing effort. Recent recruitment levels have been lower than earlier in the time-series, with the last five years of recruitment being the lowest in this series.

RECENT MANAGEMENT ADVICE:

Advice summary for 2011

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Less than 240 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Zero and a management plan should be developed
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

Outlook for 2011

MSY approach

Following the ICES MSY framework implies fishing mortality to be reduced to 0.09 (45% lower than F_{msy} because SSB is 45% below MSY $B_{trigger}$), resulting in landings of less than 150 t in 2011. This is expected to lead SSB of 2430 t in 2012.

Following the transition scheme towards the ICES MSY framework implies fishing mortality of $(0.8*F_{(2010)}) + (0.2*F_{msy}) = 0.26$, with a further reduction of 45% because SSB is 45% below MSY $B_{trigger}$, to an F of 0.14 for 2011. This results in landings of 240 t in 2011. This is expected to lead to an SSB of 2340 in 2012.
The EU transition scheme without extra reduction on account of low SSB implies a target F of 0.26. This results in landings of 410 t in 2011. This is expected to lead to an SSB of 2180 t in 2012.

PA approach

Given the low SSB and low recruitment since 2000, it is not possible to identify any non-zero catch which would be compatible with the precautionary approach. ICES **recommends** a closure of the fishery in 2011 and a recovery plan should be developed and implemented as a prerequisite to reopening the fishery.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 3 because the stock is outside safe biological limits. The resulting TAC is derived from a 30% reduction from the assumed fishing mortality in 2010. The resulting TAC would be 320 t.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised catch options for 2011, though noting a small labelling error in the forecast table where "$F_{(2010)}*0.7$" should read "$F_{(2010)}*0.75$".

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that sole in Division VIIa falls under Category 3. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 320 t, based on a 30% reduction in F, under (b) choice (i) under Action to take.

3.17. Sole (*Solea solea*) in Divisions VIIf,g (Celtic Sea)

FISHERIES: The sole fishery is concentrated on the north Cornish coast off Trevose Head and around Lands End. Reported landings have generally declined since the mid 1980s, up to 1998. Since then they increased to around 1,300 t in the early 2000's. Landings in 2009 were 800 t.

Sole are taken mainly in a beam trawl fishery that started in the early 1960s and, to a lesser extent, in the longer established otter trawl fisheries. In the beam trawl fishery sole is mainly taken as part of a mixed demersal fishery with plaice and, to a lesser extent, cod. Both of the latter stocks require a reduction in fishing mortality.

In the 1970s, the fishery was mainly carried out by Belgian beam trawlers and Belgian and UK otter trawlers. The use of beam trawls (to target sole and plaice) increased during the mid-1970s, and the Belgian otter trawlers have now been almost entirely replaced by beam trawlers. Effort in the Belgium beam trawl fleet increased in the late 1980s as vessels normally operating in the North Sea were attracted to the west by improved fishing opportunities. Beam trawling by UK vessels increased substantially from 1986, reaching a peak in 1990 and decreasing thereafter. In the Celtic Sea, the beam and otter trawl fleets also take other demersal species such as plaice, cod, rays, brill, turbot, and anglerfish.

Currently the fisheries for sole in the Celtic Sea and Bristol Channel involve vessels from Belgium, taking around 65%, the UK around 25%, France around 5% and Ireland also around 5% of the total landings.

The Celtic Sea is an area without days-at-sea limitations for demersal fisheries. In the past this has resulted in increased effort in the Celtic Sea as a direct result of restrictive effort in other areas. This was particularly the case in 2004–2005 when effort in the sole fishery increased because of restrictive days at sea in the eastern channel (Division VIId).

SOURCE OF MANAGEMENT ADVICE: The advice is based on an analytical age-based assessment using landings, two commercial cpue series, and one survey index.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	2200 t	Bpa
	F_{msy}	0.31	Provisional proxy based on stochastic simulations
Precautionary Approach	B_{lim}	Not defined	
	B_{pa}	2200 t	There is no evidence of reduced recruitment at the lowest biomass observed and B_{pa} can therefore be set equal to the lowest observed SSB.
	F_{lim}	0.52	F_{lim}: F_{loss}.
	F_{pa}	0.37	This F is considered to have a high probability of avoiding F_{lim} and maintaining SSB above B_{pa} in 10 years, taking into account the uncertainty of assessments. F_{pa}: F_{lim} × 0.72 implies a less than 5% probability that (SSB_{MT}< B_{pa}).

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	⊕	⊕	⊕
Precautionary approach (F_{pa},F_{lim})	⊕	⊕	⊕

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	⊕	⊕	⊕
Precautionary approach (B_{pa},B_{lim})	⊕	⊕	⊕

The spawning-stock biomass has been above B_{pa} since 2001. Fishing mortality has decreased from F_{lim} in 2003 to the lowest levels in the time series. The 2007 and 2008 year classes are estimated to be above average.

RECENT MANAGEMENT ADVICE:

Advice summary for 2011

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Less than 1400 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 1700 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

Outlook for 2011

MSY approach

Following the ICES MSY framework implies fishing mortality to be 0.31, resulting in landings of 1400 t in 2011. This is expected to lead to an SSB of 4900 t in 2012.

PA approach

The fishing mortality in 2011 should be no more than F_{pa} corresponding to landings of less than 1700 t in 2011. This is expected to keep SSB above B_{pa} in 2012.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 1. Fishing at F_{msy} would result in a 45% TAC increase for 2011 however there is a 25% TAC constraint applied to category 1 stocks resulting in a 2011 TAC of 1200 t.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that sole in Division VIIf,g falls under Category 1. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 1,200 t on the basis of a 25% increase in the TAC. STECF notes that this will result in exploitation below MSY.

3.18. Sole (*Solea solea*) in Division VIIe (Western English Channel).

FISHERIES: Total landings reached a peak in the early 1980s, initially because of high recruitment in the late 1970s and later because of an increase in exploitation. In recent years, English vessels have accounted for around 60% of the total landings, with France taking approximately a third, and Belgian vessels the remainder. UK landings were low and stable between 1950 and the mid-1970s, but increased rapidly after 1978 due to the replacement of otter trawlers by beam trawlers.

Sole are widespread and usually taken in conjunction with other species to varying degrees, dependent on location and season. The most productive sole fishery grounds are located close to ports, while the highest catches of anglerfish for example are taken further south and west in Division VIIe.

The principal gears used are otter-trawls and beam-trawls, and sole tends to be the target species of an offshore beam-trawl fleet, which is concentrated off the south Cornish coast and also catches plaice and anglerfish. The total landings have been stable over 1991-1999 and amounts to around 900 t. Since 2000, landings have been around 1,000 until 2009 when due to the introduction (in late 2008) of a single area licensing scheme compliance improved dramatically and landings dropped to 630 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Analytical assessment based on landings, survey and commercial CPUE data.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	2800 t	Provisional, based on former B_{pa}
	F_{msy}	0.27	Provisional, based on management plan simulations (2006)
Precautionary approach	B_{lim}	Not defined	
	B_{pa}	Not defined	
	F_{lim}	Not defined	
	F_{pa}	Not defined	

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	2009
MSY (F_{msy})	⊖	⊖	⊕
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)

	2008	2009	2010
MSY ($B_{trigger}$)	⛔	⛔	⛔
Precautionary approach (B_{pa},B_{lim})	?	?	?

The large reduction of F in 2009 reflects the reduction in fishing effort. SSB is around the lowest observed values in the time series. Recruitment has been fluctuating without trend.

MANAGEMENT AGREEMENT: Council Regulation (EC) No. 509/2007 establishes a multi-annual plan for the sustainable exploitation of Division VIIe sole.

RECENT MANAGEMENT ADVICE:

Advice summary for 2011

Management Objective (s)	**Landings in 2011**
MSY approach with caution at low stock size	Less than 660 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

Outlook for 2011

MSY approach

Following the ICES MSY framework implies fishing mortality to be at 0.24 (14% lower than F_{msy} because SSB is 14% below MSY $B_{trigger}$). This implies landings of less than 660 t in 2011.

Management plan

Council Regulation (EC) No. 509/2007 establishes a multi-annual plan for the sustainable exploitation of Division VIIe
sole. Years 2007–2009 were deemed a recovery plan, with subsequent years being deemed a management plan. For 20010, 2011, and 2012 the TAC shall be set at the highest value resulting from either a 15% reduction in F compared to average F (2007–2009) or an F of 0.27, with a maximum TAC variation of no more than 15%.

Following the agreed management plan implies an F for 2011 of 0.3 (15% lower than the average F (2007–2009) or 0.85*0.35). Since this would result in a TAC increase of more than 15%, the resulting TAC is the maximum 15% increase of 710 t in 2011. This is expected to lead to a SSB increase of 7% in 2012. This plan has not been evaluated by ICES.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

STECF notes that in accordance with the multi-annual management plan (Category 4) landings in 2011 should be 710 t. This figure is calculated on the basis of a 15% increase in the TAC. Exploitation at the level of F_{msy} implies a TAC of 740 t (19% increase in the TAC), but the rate of yearly TAC variation is restricted to 15% by the management plan.

3.19. Demersal elasmobranches in the Celtic and Irish Seas

Previous stock summaries and advice demersal elasmobranchs has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice at the level of the Celtic and Irish Seas. Furthermore, ICES has not issued any new advice since 2008. The stock summary and advice for demersal elasmobranchs in the Celtic and Irish Seas will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice for this stock is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

3.20. Herring (*Clupea harengus*) in the Irish Sea (Division VIIa)

FISHERIES: This herring stock is mainly exploited by the UK with Ireland taking a small proportion of the catches in some years. Since 1987 the landings have fluctuated between about 2,000 t and 10,000 t. Catches in 2009 were 4,600 t. Since 2002 the TAC has been 4,800 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The exploratory assessment of the stock is based on survey data and catch-at-age data. The assessment is not considered accurate with respect to recent F and SSB, but it is indicative of trends and levels in the past.

REFERENCE POINTS:

	Type	Value	Technical basis
MSY	MSY $B_{trigger}$	Not defined	
Approach	F_{msy}	Not defined	
Precautionary approach	B_{lim}	6000 t	Lowest observed SSB
	B_{pa}	9500 t	$B_{pa} = B_{lim} * 1.58$
	F_{lim}	Not defined	
	F_{pa}	Not defined	

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The assessment is indicative of trends only. The catches have been close to TAC levels and the main fishing activity has not varied considerably. The 2009 acoustic survey estimates suggest that SSB is close to its highest abundance in the 17 year time-series.

RECENT MANAGEMENT ADVICE:

Advice Summary for 2011

Management Objective (s)	Landings in 2011
Transition to an **MSY approach** with caution at low stock size	Less than 4800 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 4800 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

MSY considerations

Recent SSB trends show an increase in herring biomass. Current exploitation status is unknown in relation to F_{msy}. Therefore the catches should not be allowed to increase, resulting in landings of less than 4 800 t in 2011.

PA considerations

The current fishing pattern shows no signs of being detrimental to the stock, therefore the maintenance of catch at current TAC levels of 4 800 t, in the short-term, is considered precautionary.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 8: the state of the stock is not known but trends based assessments indicate an increase in SSB. The resulting TAC would be a TAC increase of up to 15%, this would result in a TAC 5,520 t.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that herring in Division VIIa falls under Category 8. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 5,520 t. (15 % increase). The exploratory assessment indicates that the stock abundance in the last two years exceeds the average abundance in the three preceding years by more than 20% and triggers a 15% increase in the TAC.

3.21. Herring (*Clupea harengus*) in the Celtic Sea (VIIg and VIIa South), and in VIIj Division VIIg,h,j,,k

FISHERIES: France, Germany, Ireland, Netherlands and UK have participated in the herring fisheries in this area. However in recent years the fishery has mainly been exploited by Irish vessels and Ireland has been allocated nearly 90% of the overall quota. Until the late nineties, landings fluctuated between about 19,000 and 23,600 t. From 1998 to 2009, landings decreased from 20,300 to just above5,800 t. The fishery exploits a stock, which is considered to consist of two spawning components (autumn and winter). The stock is exploited by two types of vessels, larger boats with Refrigerated Sea Water (RSW) storage, and smaller dry hold vessels. The smaller vessels are confined to the spawning grounds (VIIaS and VIIg) during the winter period. The RSW vessels target the stock inshore in winter and offshore during the summer feeding phase (VIIg). The number of vessels participating in the fishery has decreased in recent years. However, efficiency has increased, especially in the RSW vessels. An increasing proportion of the catch is now being taken by RSW vessels and lower amounts by dry-hold vessels. There has been little fishing in VIIj in recent seasons, and there is evidence that stock abundance in this area is currently low.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The current management regime has resulted in catch data, which are thought to be reasonably reliable in recent years. The assessment is based on catch-at-age data and acoustic survey data. There is no recruitment index available for this stock.

REFERENCE POINTS:

	Type	Value	Technical basis
MSY Approach	**MSY $B_{trigger}$**	Not defined	
	F_{msy}	0.25	Stochastic simulations on segmented regression stock recruit relationship.
Precautionary approach	B_{lim}	26 000 t	The lowest stock observed
	B_{pa}	44 000 t	Low probability of low recruitment
	F_{lim}	Not defined	
	F_{pa}	Not defined	

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	2009
MSY (F_{msy})	⊖	⊖	⊖
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	2010
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	⊕	⊕	⊕

The current assessment shows the stock continues to improve. SSB is at the highest level since the 1960s and continues to increase. F is at an historic low level and well below F_{msy}.

MANAGEMENT AGREEMENT:

The Irish Celtic Sea Herring Management Advisory Committee was established to manage the Irish fishery for this herring stock. This Committee manages the Irish quota and implements measures in addition to the EU regulations. The committee proposed a rebuilding plan in 2008. The TAC for 2009 was set by the Council accordingly. This plan has not been formally agreed yet and implies fishing at $F_{0.1}$ (In 2007: 0.19, in 2008/2009=0.17).

Rebuilding Plan Proposed by the Celtic Sea Management Advisory Committee, Ireland, for this stock.

1. For 2009, the TAC shall be reduced by 25% relative to the current year (2008).
2. In 2010 and subsequent years, the TAC shall be set equal to a fishing mortality of $F_{0.1}$.
3. If, in the opinion of ICES and STECF, the catch should be reduced to the lowest possible level, the TAC for the following year will be reduced by 25%.
4. Division VIIaS will be closed to herring fishing for 2009, 2010 and 2011.
5. A small-scale sentinel fishery will be permitted in the closed area, Division VIIaS. This fishery shall be confined to vessels, of no more than 65 feet length. A maximum catch limitation of 8% of the Irish quota shall be exclusively allocated to this sentinel fishery.
6. Every three years from the date of entry into force of this Regulation, the Commission shall request ICES and STECF to evaluate the progress of this rebuilding plan.
7. When the SSB is deemed to have recovered to a size equal to or greater than B_{pa} in three consecutive years, the rebuilding plan will be superseded by a long-term management plan.

ICES has evaluated the plan and considers it is precautionary within the estimated stock dynamics. If a sequence of low recruitments takes place then the harvest control rule may have to be re-evaluated.

The Council and the Commission in 2009 agreed that until a plan is adopted, it would be appropriate to set the TAC for herring in Celtic Sea and Division VIIj according to the following rule:

- For 2010 and subsequent years, the TAC is and should be set corresponding to a fishing mortality of F0.1 = 0.19.
- If, in the opinion of ICES and STECF, the catch should be reduced to the lowest possible level, the TAC for the following year will be reduced by 25%.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Less than 16 800 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of	13 200 t

a **management plan** (e.g., catch stability)	

MSY approach

Following the ICES MSY framework implies fishing mortality to be increased to 0.25 which is much higher than current F (0.17), resulting in landings of 16 800 t in 2011. This is expected to lead to an SSB of 67 500 in 2012.

PA approach

The SSB is well above B_{pa} and F_{pa} is undefined but current F is well below F_{msy}. ICES does not advise to use B_{pa} as a target in 2012.

Management plan

ICES has been asked to provide a catch option according to the proposed rebuilding plan. This results in a TAC of 13,200 t in 2011 which is a TAC increase of 30%.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 1 since the stock is currently exploited below F_{msy}. The policy paper indicates that F_{msy} should be the basis for the TAC, with a maximum TAC variation of 25%. This results in a 25% TAC increase to 12,700 t.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that herring in Celtic Sea and Division VIIj falls under Category 1. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 12,700 t (25% increase).

Special request on herring in VIIg-k and VIIa south

The Council and the Commission agree that until such a plan is adopted, it would be appropriate to set the TAC for this stock according to the following rule:

1. For 2010 and subsequent years, the TAC is and should be set corresponding to a fishing mortality of $F_{0.1}$ = 0.19.

2. If, in the opinion of ICES and STECF, the catch should be reduced to the lowest possible level, the TAC for the following year will be reduced by 25%.

STECF response

STECF does not advice thqt catches should be reduced to the lowest level and accordingly notes that fishing at a fishing mortality of 0.19 is predicted to result in a total catch in 2011 of 13,200 t.

3.22. Herring (*Clupea harengus*) in Division VIIe,f

FISHERIES: This stock is exploited by the UK and France. The TAC for this stock has been set at 1,000 t and has remained unchanged in recent years. This TAC is divided equally between the UK and France. Landings have fluctuated over the last ten years, from a low of 176 t to a high of 1,040 t. In 2004, 2005, 2006 and 2007 landings have been between 700 and 800 t. Landings in 2007 and 2008 were 602 t respectively 614 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. No analytical assessment has been made in recent years.

REFERENCE POINTS: No reference points have been defined for this stock.

STOCK STATUS The available information is inadequate to evaluate stock trends, and the state of the stock is uncertain.

RECENT MANAGEMENT ADVICE: No management advice is provided for this stock.

STECF COMMENTS: With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that herring in Divisions VIIe,f falls under Category11. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 850 t (15 % reduction). The rule for category 11 stocks specifies that the TAC should be adjusted towards recent real catch levels but should not be changed by more than 15 %. Average landings in 2007 and 2008 have been 608 t. Current TAC is 1000 t.

3.23. Sprat (*Sprattus sprattus*) in Divisions VIId,e.

FISHERIES: Only the UK carries out a sprat fishery in this area. For the last 20 years the annual landings have been in the order of 1,200 to 5,400 t. Landings have decreased since 1999. Landings in 2004 were the lowest in the time series, at about 800 t. Slight increases in landings were seen in 2005 and 2006 with about 1,600 t and 2,000 t reported respectively. Landings in 2008 and 2009 were around 3,400 t respectively 2,800 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. There have been no attempts to undertake an assessment and in 2010 ICES once again consider that insufficient data are available to carry out an assessment.

REFERENCE POINTS: There are no reference points for this stock.

STOCK STATUS: the state of this stock remains unknown. Sprat is a short-lived species with natural fluctuations in stock biomass.

RECENT MANAGEMENT ADVICE: None.

STECF COMMENTS:

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that sprat in Divisions VIId,e falls under Category11. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 4,702 t (15 % reduction). The rule for category 11 stocks specifies that the TAC should be adjusted towards recent real catch levels but should not be changed by more than 15 %. Average landings in 2007 and 2008 have been 3063 t. Current TAC is 5,532 t

4. Resources in Southwestern waters

4.1. Norway lobster (*Nephrops norvegicus*) in Southwestern waters

Norway lobster in Divisions VIII, contains 4 Functional Units:

- Divisions VIIIa, b: Bay of Biscay North and south (FU 23 & FU 24)
- Divisions VIIIc: North Galicia (FU 25) and Cantabrian Sea (FU 31)

Of the 4 *Nephrops* FUs in ICES div. VIII the *Nephrops* in Bay of Biscay (FUs 23 and 24) is the major contributor to *Nephrops* landings from this area. All the fisheries in VIII taking *Nephrops* are mixed fisheries, in which a single target species often may be difficult to identify. A major fin-fish component is hake. None of these 4 FUs are assessed by UWTV surveys. At present only FUs 23 and 24 are subject to analytical assessments. These *Nephrops* FUs are assessed by the ICES Working Group on the Assessment of Southern Shelf Stocks of Hake, Monk and Megrim (WGHMM),

4.1.1. Norway lobster (*Nephrops norvegicus*) in FU 23 & FU 24, Bay of Biscay (Divisions VIIIa, b)

FISHERIES: There are two Functional Units in these divisions VIIIa & VIIIb: a) Bay of Biscay North (FU 23) and b) Bay of Biscay South (FU 24), together called Bay of Biscay. Nearly all landings are taken by French trawlers. Landings have fluctuated between 3,500 and 6,000 t during the time-series. These fluctuations may be explained by variability in recruitment. In 2009 total landings amounted to 3029 t. The corresponding estimated discards were 1833 t. Despite a decommissioning programme for French vessels, it is likely that effective effort has stabilised since 1994 or even increased due to increased gear efficiency.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Biennial advice (for 2011 and 2012) for this FU was provided in 2010. The advice is based on an (pseudo-) age-based assessment. Catch-at-age data are generated by slicing of sampled length distributions combined for males and females.

REFERENCE POINTS: No reference points have been defined for this stock.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

RECENT MANAGEMENT ADVICE:

Management Objective(s)	**Landings in 2011 and 2012**
Transition to an **MSY approach** with caution at low stock size	Reduce from recent levels
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Not to exceed recent levels (3100 t)
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g. catch stability)	n/a

No reliable assessment can be presented for this stock. The main cause of this is the high uncertainty in point estimates for recent years. Therefore, fishing possibilities cannot be projected.

MSY approach

The exploitation status is unknown but the stock indicators (SSB and recruitment) are stable. According to ICES MSY approach, catches should be reduced from recent levels. ICES cannot quantify the rate of reduction required.

PA approach

According to PA approach, catches should not exceed the recent catches, corresponding to landings of 3100 t.

EU Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 6, which according to annex IV corresponds to unchanged TAC.

The categorisation of the stock according to the EU policy paper, corresponds to unchanged TAC. However, since landings have been below TAC in recent years, this option allows for an increase in landings, which is not in agreement with either ICES MSY or PA approach.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that *Nephrops* in FU 23 & 24 falls under Category 6. Accordingly STECF notes that the rules for the above category (Annex IV. 4) imply an unchanged TAC in 2011 (= 3900 t) compared to the 2010 TAC. STECF notes however this option allows for an increase in landings, which is not in agreement with any of the advised catch options.

4.1.2. Norway lobster (*Nephrops norvegicus*) in Division VIIIc (FU 25 & FU 31)

FISHERIES: There are two Functional Units in this Management Area: a) North Galicia (FU 25) and b) Cantabrian Sea (FU 31). All catches from these FUs are taken by Spain. *Nephrops* constitutes a small component of mixed fishery landings taken by bottom trawlers. Hake constitutes a main component of these landings. Landings and effort in both functional units have declined and landings are now at extremely low levels compared to earlier years (27 t in 2009) compared to landings of about 500 t in the early 1990s).

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Biennial advice (for 2011 and 2012) for this FU was provided in 2010. Advice is based on landings data, LPUE data and trends in mean size for both FUs

REFERENCE POINTS: No precautionary reference points are defined for this stock.

STOCK STATUS (for both FU 25 and FU 31):

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

Although the exact stock status is unknown, all information indicates that both stocks are at a very low abundance level. Landings and lpue have fluctuated along a marked downward trend and are currently very low. Mean sizes have shown an increasing trend over the time-series, which may reflect poor recruitment.

RECENT MANAGEMENT ADVICE (for both FU 25 and FU 31):

Management Objective(s)	Catch in 2011 and 2012
Transition to an **MSY approach** with caution at low stock size	n/a
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Zero catch
Cautiously avoid impaired recruitment and achieve other objective(s) of	n/a

a **management plan** (e.g. catch stability)	

No analytical assessment is available for both these FUs. Therefore, fishing possibilities cannot be projected.

MSY approach

Given the depleted state of these FUs it is not relevant to provide MSY based advice.

PA approach

The new data (landings and lpue) available do not change the perception of FU 25 and FU 31 status, and give no reason to change the advice given in 2008 "*Given the very low state of the stock, ICES repeats its advice of a zero catch for the stock in FU 25 and FU3* ".

Management plan

The calculation of a TAC corresponding to a reduction in F of 10% as called for in the recovery plan (Council Regulation (EC) 2166/2005) was not feasible because short-term forecasts are unreliable.

EU Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this FU is classified under category 10 which implies a TAC reduction of at least 25%. There is a mismatch between the management area and the advice area.

STECF COMMENTS STECF agrees with the ICES assessment that the state of the stock is unknown.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that *Nephrops* FUs 25 & 31 fall under Category 4 (management plan in place for southern hake and *Nephrops*).

STECF notes that the rules for the management plan prescribe that the TACs for Norway lobster in Divisions VIIIc and IXa shall be set at a level that will result in the same relative change in its fishing mortality rate as the change in fishing mortality rate achieved for the hake stock. However, the changes in TAC shall be limited to no more than +/- 15 %. STECF notes that there are no indications of any recovery of the *Nephrops* stocks in VIIIc, and a reduction in fishing mortality is likely to result in a reduction in catches. STECF therefore advises that in the absence of a catch forecast and in an attempt to limit fishing mortality on *Nephrops* in line with the intended reduction s for hake, the TAC for *Nephrops* in VIIc should be reduced by 10%. This implies a TAC in 2011 for *Nephrops* in VIIIc of 91 t.

4.1.3. Norway lobster (*Nephrops norvegicus*) in Divisions VIIId, e

FISHERIES: There are no reported landings of *Nephrops* from this area

RECENT MANAGEMENT ADVICE: ICES has suggested that a zero TAC be set for this area to prevent misreporting.

STECF COMMENTS: STECF notes that the most recent information for this stock relates to the year 2002. The above text is unchanged from the STECF Review of Scientific advice on stocks of Community interest for 2004. STECF agrees with the advice from ICES.

FISHING OPPORTUNITIES FOR 2011 ACCORDING TO ANNEX II OF COM(2010) 241

STECF considers it is not appropriate to give a category to *Nephrops* in VIIId,e, since there are no reported catches from this area.

4.1.4. Norway lobster (*Nephrops norvegicus*) in Division IX and X.

Norway lobster in Divisions IX contains 5 Functional Units:

FU no.	Name	ICES area	Statistical rectangles
26	West Galicia	IXa	13-14 E0-E1
27	North Portugal (N of Cape Espichel)	IXa	6-12E0; 9-12E1
28	South-West Portugal (Alentejo)	IXa	3-5 E0-E1
29	South Portugal (Algarve)	IXa	2E0-E2
30	Gulf of Cadiz	IXa	2-3 E2-E3

FISHERIES: There are five Functional Units (FU) in Division IXa: a) West Galicia (FU 26), b) North Portugal (FU 27), c) Southwest Portugal (FU 28), d) South Portugal (FU 29), and e) Gulf of Cadiz (FU 30). These *Nephrops* FUs are assessed by the ICES Working Group on the Assessment of Southern Shelf Stocks of Hake, Monk and Megrim (WGHMM),

Nephrops represents a small, but valuable by-catch in these fisheries targeting mainly demersal fish species. In the Southwest and South SW and S Portugal there is a crustacean trawl fishery, targeting mainly deepwater crustaceans. The fishery in West Galicia, North Portugal and Gulf of Cádiz is mainly conducted by Spanish vessels, and that in Southwest and South Portugal by Portuguese vessels, on deep water grounds (200-750 m). The Portuguese fleet comprises two components: demersal fish trawlers and crustacean trawlers. Total landings from Div. IXa (FUs 26-30) have drecreased dramatically during the last 30 years. In 1980 total landings exceeded 2000 t, while they were 267 t in 2009, of which 242 t were taken from FUs 28 - 30.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. Biennial advice (for 2011 and 2012) for these FUs was provided in 2010.The advice for the stocks in FUs 26 and 27(West Galicia and North Portugal), and FU 30 (Gulf of Cadiz) was based on trends in LPUE data and data on mean size, while the advice for the stocks in FU 28 and FU 29 (Southwest and South Portugal) was based on an (pseudo-) age-based assessment using catch-at- age data generated by slicing of sampled length distributions (combined for males and females).

REFERENCE POINTS: No reference points have been defined for FUs 26-30.

STOCK STATUS: (for FU 26, 27, 28, 29 and 30):

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

Althoug the exact stock status is unknown, all information indicates that all stocks are at a very low abundance level. Landings and lpue have fluctuated along a marked downward trend and are currently very low.

West Galicia (FU 26)and North Portugal (FU 27): The available information indicates that the stocks are at a very low level of abundance in SW and S Portugal (FU 28 & FU 29): Stock status is uncertain, but appears to have recovered from its low level in 1996 to almost the level of the mid-1980s in 2002 and has been relatively stable since then.

Gulf of Cadiz (FU 30): State of the stock is unknown, but abundance has been stable in recent years.

RECENT MANAGEMENT ADVICE:

FUs 26–27:

Management Objective(s)	**Catches in 2011 and 2012**
Transition to an **MSY approach** with caution at low stock size	n/a
Cautiously avoid impaired recruitment **(Precautionary Approach)**	Zero catch
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g. catch stability)	n/a

The stocks in FUs 26–27 are at a very low level. Increasing mean sizes in landings in combination with record low lpues in recent years indicate that the stocks suffer a progressive recruitment failure. Landings are still decreasing and are at an insignificant level compared with historic values.

MSY approach

Given the depleted state of the FU it is not relevant to provide MSY based advice.

PA approach

The new data (landings and lpue) available do not change the perception of FU 26-27 status, and give no reason to change the previous advice of zero catch. The stocks in FUs 26–27 are at a very low level. Increasing mean sizes in landings, in combination with record low lpues in recent years, indicate that the stocks suffer a progressive recruitment failure.

Management plan

The calculation of a TAC corresponding to a reduction in F of 10% as called for in the recovery plan (Council Regulation (EC) 2166/2005) was not feasible because short-term forecasts are unreliable.

EU Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) these FUs are classified under category 10 which implies a TAC reduction of at least 25%. The TAC is for all Division IXa and it is shared with other FUs (28-29 and 30) which are in a different category.

FUs 28–29:

Management Objective(s)	**Landings in 2011 and 2012**
Transition to an **MSY approach** with caution at low stock size	Reduced catch from recent levels
Cautiously avoid impaired recruitment **(Precautionary Approach)**	Less than 190 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g. catch stability)	n/a

Fishing mortality has decreased in the last five years, and is presently considered to be record low. The trend in SSB and recruitment in recent years is not considered reliable.

MSY approach

The stock trend is stable and the exploitation status is unknown. According to ICES MSY approach, catches should be reduced from recent levels. ICES cannot quantify the rate of reduction required.

PA approach

According to PA approach, catches should not exceed the recent average catch (2007-2009), corresponding to landings of 190 t.

Management plan

The calculation of a TAC corresponding to a reduction in F of 10% as called for in the recovery plan (Council Regulation (EC) 2166/2005) was not feasible because short-term forecasts are unreliable.

EU Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) these FUs are classified under category 6. This means that the state of the stocks is unknown but abundance information indicates no change. The resulting TAC would remain unchanged. The TAC is for all Division IXa and it is shared with other FUs (26-27 and 30) which are in a different category.

FU 30:

Management Objective(s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Reduce from recent levels at rate greater than the rate of the stock decrease
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 150 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g. catch stability)	n/a

The stock appears to be low compared to historic levels. Landings and effort have decreased substantially in recent years.

MSY approach

The long-term trend of lpue is declining and the exploitation status is unknown. Following the ICES MSY framework, it is recommended to reduce catch from recent levels at rate greater than the rate of the stock decrease. ICES cannot quantify the rate of reduction required.

PA approach

Recent lpue suggest that the stock is stable at a low level. According to the PA approach, it is recommended not to increase catch above the recent average (150 t).

Management plan

The calculation of a TAC corresponding to a reduction in F of 10% as called for in the recovery plan (Council Regulation (EC) 2166/2005) was not feasible because short-term forecasts are unreliable.

EU Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 6. Abundance information indicates no change in last five years and the resulting TAC would remain unchanged. The TAC is for all Division IXa and it is shared with other FUs (26-27 and 28-29) which are in a different category.

STECF COMMENTS: STECF agrees with the ICES assessment that the state of these stocks is unknown.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that *Nephrops* FUs 26-30 fall under category 4 (management plan in place for southern hake and *Nephrops*).

STECF notes that the rules for the management plan prescribe that the TACs for Norway lobster in Divisions VIIIc and IXa shall be set at a level that will result in the same relative change in its fishing mortality rate as the change in fishing mortality rate achieved for the hake stock. However, the changes in TAC shall be limited to no more than +/- 15 %. STECF notes that there are no indications of any recovery of the *Nephrops* stocks in VIIIc,

and a reduction in fishing mortality is likely to result in a reduction in catches. STECF therefore advises that in the absence of a catch forecast and in an attempt to limit fishing mortality on *Nephrops* in line with the intended reduction s for hake, the TAC for *Nephrops* in IXa should be reduced by 10%. This implies a TAC in 2011 for *Nephrops* in IXa of 303 t.

4.2. Hake (*Merluccius merluccius*) in Divisions VIIIc, IX and X (Southern hake)

FISHERIES: This stock is exploited in a mixed fishery by Spanish and Portuguese trawlers and artisanal fleets. Landings fluctuated between 6,700 and 35,000 t (1972-2005) and in 2009 were 19,200t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. A new assessment model has been adopted. The advice is now based on a length-age analytical assessment (GADGET) using catch data, commercial CPUE series and survey data. This new assessment includes the Gulf of Cadiz landings which were excluded from the assessment in recent years.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	not defined	
	F_{msy}	0.26	F_{max}
Precautionary Approach	B_{lim}	not defined	
	B_{pa}	not defined	
	F_{lim}	not defined	
	F_{pa}	0.4	Provisional value, based on historic dynamic of the stock.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	⛔	⛔	⛔
Precautionary approach (F_{pa},F_{lim})	⛔	⛔	⛔

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

In the absence of defined biomass reference points the state of the stock cannot be evaluated with regard to these. Fishing mortality has been stable over the last decade and about three times above F_{msy}. Recruitment has been high since 2004, and the 2007 year class is record high. Surveys indicate good 2009 recruitment. SSB has increased in recent years.

MANAGEMENT OBJECTIVES: There are explicit management objectives for southern hake and *Nephrops* established under the EC Reg. No. 2166/2005 establishing measures for the recovery of the Southern hake and Norway lobster stocks in the Cantabrian Sea and Western Iberian Peninsula by January 2016. The recovery plan has the objective of bringing the spawning stock biomass of hake above 35 000 tonnes within 10 years and to reduce fishing mortality to 0.27. The main elements in the plan are a 10% annual reduction in F and a 15% constrain on TAC change between years.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landing in 2011**

Transition to an **MSY approach** with caution at low stock size	Less than 8 500 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 8,500 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g. catch stability)	n/a

MSY approach

As no MSY $B_{trigger}$ has been identified for this stock, the ICES MSY framework has been applied with F_{msy} without consideration of SSB in relation to MSY $B_{trigger}$. Following the ICES MSY framework implies fishing mortality to be reduced to 0.26 (no MSY Btrigger is defined), resulting in landings of 5 800 t in 2011. This is expected to lead to an SSB of 30 000 t in 2012. As no MSY $B_{trigger}$ has been identified for this stock, the MSY transition scheme has been applied as the lowest value of fishing mortality corresponding to $(0.8*F2010)+(0.2*F_{msy})$, of 0.66, and F_{pa}, resulting in landings of less than 8 500 t in 2011. This is expected to lead to an SSB of 26 000 t in 2012.

PA approach

The fishing mortality in 2011 should be no more than the provisional F_{pa} corresponding to landings of less than 8 500 t in 2011.

Management plan

Following the agreed recovery plan (EC Reg. No. 2166/2005) implies a 15% TAC increase to 10 700 t in 2011, which is expected to lead to an SSB of 23 100 t in 2012. The aim of the plan is to recover the stock to a spawning-stock biomass above 35 000 tonnes by 2016 and a goal of reducing fishing mortality to 0.27. The main elements in the plan are a 10% annual reduction in F and a 15% constraint on TAC change between years. ICES did not evaluate the plan

EU Policy paper

In light of the EU policy paper on fisheries management (COM(2010) 241) this stock is classified under category 4, which implies a TAC in 2011 of 10 700 t.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Hake in Divisions VIIIc, IX and X (Southern hake) falls under Category 4. Accordingly STECF notes that the rules for the above category would imply a TAC in 2011 of 10,695 t.

STECF notes that the aim of the recovery plan is to recover the stock to a spawning-stock biomass above 35,000 tonnes. Since the new assessment method changes the historic dynamic of the stock, previous precautionary reference points for F and SSB may no longer be valid. An evaluation of the southern hake management plan will be conducted by STECF in October 2010 and an impact assessment for a revised plan will also be undertaken in the spring of 2011.

STECF also notes that the implementation of the recovery plan has not been effective. Fishing mortality has not decreased and the TAC has been overshot every year of the plan. Furthermore, discard rates are high. STECF therefore **recommends** that measures to ensure compliance with the agreed TAC and effort restrictions be put in place as a matter of urgency.

4.3. Whiting (*Merlangius merlangus*) - VIII

STECF did not have access to any stock assessment information on whiting in this area.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Whiting in Divisions VIII falls under Category 11. Accordingly STECF notes that the rules for the above category would imply a TAC in 2011 of 2754 t based on a 15% reduction on the 2010 TAC towards the recent level of catches (mean reported landings 2007-2009).

4.4. Whiting (*Merlangius merlangus*) - IX, X

ICES has not assessed this stock and STECF has no access to any stock assessment information on whiting in this area.

A precautionary TAC in areas IX, X for 2010 was set to 588 t.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Whiting (Merlangius merlangus) - IX, X falls under Category 11. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 400 t which is the average of recent catches (2007-2008-2009) with a 15% TAC constraint.

4.5. Anglerfish (*Lophius piscatorius and Lophius budegassa*) in Div´s VIIIa, b, d, e

Anglerfish within the two management areas VII and VIII abde are assessed together and comprise of two species (*L. piscatorius and L. budegassa*), which are not always separated for market purposes. Details of stock status and advice are given in Section 3.9.

4.6. Anglerfish (*Lophius piscatorius and Lophius budegassa*) in VIIIc, IX, X

FISHERIES: Anglerfish species, *L. piscatorius* and *L. budegassa*, are caught together by bottom trawlers and gillnet fisheries. Anglerfishes, hake, *Nephrops*, and megrim are partly caught in the same mixed fisheries. Discarding is considered low. There is no minimum landing size for anglerfish, but in order to ensure marketing standards a minimum landing weight of 500 g was fixed in 1996.

For *Lophius piscatorius* total landings in 2009 were 2300 t; 47% were taken by bottom trawl, 46% by Spanish gillnet, and 7% by Portuguese artisanal gear types. For *Lophius budegassa*, total landings in 2009 were 770 t, where 52% bottom otter trawl, 40 % Spanish gillnet, and 8% Portuguese artisanal gear types

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. In 2010, a surplus production model (ASPIC) was used to provide estimates of stock biomass and fishing mortality relative to their respective maximum sustainable yield (MSY) values.

REFERENCE POINTS

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	0.26	Estimated from surplus production model (WGHMM 2010).
Precautionary Approach	B_{lim}	Not defined	
	B_{pa}	Not defined	
	F_{lim}	Not defined	
	F_{pa}	Not defined	

STOCK STATUS:

Lophius piscatorius

F (Fishing Mortality)		
2007	2008	**2009**

MSY (F_{msy})	⊖	⊖	⊖
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

Biomass of white anglerfish (in 2010) is estimated to be well below B_{msy} and despite the decrease in fishing mortality since 2005, F (in 2009) is still above F_{msy}

Lophius budegassa

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	⊖	⊕	⊕
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

Fishing mortality has decreased since 1999 and is in 2009 below F_{msy}. Biomass has increased since 2002, and is presently 80% of B_{msy}.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	L. piscatorius: less than 1000 t; L. budegassa: less than 480 t; Combined anglerfishes: less than 1500 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g. catch stability)	n/a

MSY approach

Lophius piscatorius

The stock is well below any potential MSY $B_{trigger}$. Following the ICES MSY framework implies that the advised fishing mortality should be F_{msy} multiplied by the value of B/MSY $B_{trigger}$ resulting in landings of 1000t. This is expected to lead to a 37% SSB increase in 2012

Lophius budegassa

Following the ICES MSY framework implies fishing mortality to be reduced by 66% resulting in landings of 480 t in 2011. This is expected to lead to a 31% biomass increase in 2012.

Both stocks

As both species of anglerfish (*L. piscatorius* and *L .budegassa*) are caught in the same fisheries and are subject to a combined TAC, the same reduction from current fishing mortality is assumed for both species. The reduction is driven by *L. piscatorius*, as it is the species in poor condition and whose current fishing levels are above F_{msy}.

A common reduction in F for both species, driven by *L. piscatorius*, is also considered for the MSY transition.

Policy paper

The option for this category is driven by the status of *L. piscatorius*, the species in poor condition. This stock is assigned to category 6. Applying to both species the F reduction required for *L. piscatorius* to reach F_{msy}, would correspond to a TAC increase larger than 15%. Hence, a 15% increase in TAC applies, resulting in combined landings of 1700 t.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stocks and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that anglerfish (*Lophius piscatorius* and *Lophius budegassa*) in VIIIc, IX, X fall in category 6. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 1720 t for combined stocks.

STECF notes that both stocks are caught together in most fisheries and managed under a common TAC, and that the advice depends on the stock in the poorer condition

STECF notes that anglerfish in VIIIc and IXa are caught in the same fisheries as hake and *Nephrops*.

To ensure recovery of anglerfish in VIIIc and IXa, it is essential that the provisions of the management plan for hake and *Nephrops* are fully implemented and enforced. Failure to do so may severely compromise any recovery of the stock. STECF therefore **recommends** that enforcement of the provisions of the management plan for hake and *Nephrops* is given high priority and that measures to ensure compliance with the TAC for anglerfish and effort restrictions are put in place as a matter of urgency.

4.7. Megrim (*Lepidorhombus whiffiagonis*) in VIIIa,b,d,e.

Megrim in Divisions VIIIa,b,d,e are assessed together with megrim in Sub area VII (Section 3.10).

4.8. Megrim (*Lepidorhombus whiffiagonis* & *Lepidorhombus boscii*) in VIIIc, IX & X

FISHERIES: Both species of megrim in the Iberian region are caught as a by-catch in the mixed bottom trawl fisheries by Portugueses and Spanish vessels and also in small quantities by the Portugueses artisanal fleet. Two species (*Lepidorhombus whiffiagonis* & *L. boscii*) are caught and they are not usually separated for market purposes and a combined advice is provided for the two stocks. Changes in the demersal fisheries in recent years have reduced the fishing effort on megrim. In 2009, landings were 1134 t for *L. boscii* and 84 t for *L. whiffigonis*.

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. The advice is based on an age-based analytical assessment based on landings and CPUE data series from surveys and commercial fleets. Bycatch and discards are not incorporated in the assessment. The two stocks are caught together and the fisheries advice therefore combines both stocks.

Lepidorhombus boscii

	Type	***Value***	***Technical basis***
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	0.18	$F_{40\%SPR}$
Precautionary Approach	B_{lim}	Not defined	
	B_{pa}	Not defined	
	F_{lim}	Not defined	
	F_{pa}	Not defined	

Lepidorhombus whiffiagonis

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	0.17	$F_{40\%SPR}$
Precautionary Approach	B_{lim}	Not defined	
	B_{pa}	Not defined	
	F_{lim}	Not defined	
	F_{pa}	Not defined	

STOCK STATUS:

Lepidorhombus boscii

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	⛔	⛔	⛔
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

SSB has decreased since the late 1980s, and shows a slightly upwards trend after reaching a minimum in 2001. Fishing mortality has been lower since the late 1990s.

Lepidorhombus whiffiagonis

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	⛔	⛔	⛔
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

SSB has decreased from the late 1980s, and since 2004 has been record low. Fishing mortality has fluctuated over the times series, but has decreased after 2006. Recruitment has been low for over a decade.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	L. boscii (four-spot megrim): less than 780t. L. whiffiagonis (megrim): less than 110 t; Combined megrims: less than 890 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	n/a
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g. catch stability)	n/a

MSY approach

Following the ICES MSY framework implies fishing mortality to be reduced to 0.18, resulting in landings of 780 t in 2011 for *L. boscii* and to 0.14, resulting in landings of 110 t in 2011 for *L. whiffiagonis*. As both species of megrim are caught in the same fisheries and are subject to a combined TAC, the same reduction from current fishing mortality is assumed for both species. The reduction necessary for *L. boscii* to reach F_{msy} is applied, as it is the species whose current fishing levels are further from F_{msy}.

As no MSY $B_{trigger}$ has been identified for both stocks, the ICES MSY transition scheme has been applied with $0.8*F(2010)+0.2*F_{msy}$ without consideration of SSB in relation to MSY $B_{trigger}$. For *L. boscii*, this implies fishing mortality to be reduced to 0.23, resulting in landings of 990 t in 2011. This is expected to lead to an SSB of 5 000 t in 2012. For *L .whiffiagonis* this implies fishing mortality to be reduced to 0.18, resulting in landings of 140 t in 2011. This is expected to lead to an SSB of 920 t in 2012. As both species of megrim are caught in the same fisheries and are subject to a combined TAC, the same reduction from current fishing mortality is assumed for both species. The reduction corresponding to *L. boscii* is applied, as it is the larger of the two reductions.

The advice from last year for the two megrim species was already based on high long-term yield, the low population level of *L. whiffiagonis* and the absence of MSY B*trigger*, the MSY transition framework is not appropriate for advice this year.

EU policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) the stocks are classified under category 1. As the TAC covers both species of megrim (*L. whiffiagonis and L . boscii*), the category pertaining to the species most at risk, *L. whiffiagonis*, applies. Applying this category to both megrim species the fishing mortality reduction necessary to reach F_{msy} for *L .boscii* (the species whose current fishing mortality is further from F_{msy}) in 2011 would lead to a 31% TAC reduction. Hence, the 25% constraint applies and the corresponding TAC for 2011 would be 960 t (for both species combined)

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock but considers that alternative catch options would be more appropriate for 2011.

Noting that an overriding objective for management is to achieve F_{msy} by 2015, STECF considers that it would be appropriate to attempt to achieve this by annual step-wise reductions in F in accordance with the ICES transitions scheme, even though there are no estimates of MSY $B_{trigger}$ for either species. Furthemore, because *L. whiffiagonis and L . boscii* are caught together in the same fisheries it would be appropriate to apply the transistion scheme harvest rule based on *L . boscii,* since current F for this species is well above its estimated F_{msy} whereas current F for *L. whiffiagonis* is close to its F_{msy} estimate.

Applying the transition scheme harvest rule to calculate the required reduction in fishing mortality for *L . boscii* implies that F in 2011 should be 0.24 (not 0.23 as given by ICES), corresponding to a 4% reduction in the assumed F for 2010. An equivalent reduction in F in 2011 for *L. whiffiagonis* gives a Fishing mortality in 2011 of F = 0.18. The predicted landings corresponding to these values for F in 2011 are 990 t and 140 t for *L . boscii* and *L.* whiffiagonis respectively implying a combined TAC for 2011 for both species combined of 1130 t.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that megrim (*Lepidorhombus whiffiagonis & Lepidorhombus boscii*) in VIIIc, IX & X falls under Category 6 because both species are currently exploites well above (*L. boscii*) or slightly above (*L. whiffiagonis*) F_{msy} and there are no reference points defined that permit an assessment of whether the stocks are within or outside safe biological limits. Accordingly STECF notes that the rules for category 6 prescribe a TAC in 2011 of 1094 t (for both species combined) based on a 15% TAC constraint on the 2010 TAC.

4.9. Plaice (*Pleuronectes platessa*) in VIII, IX and X.

ICES has not assessed this stock and STECF has no access to any stock assessment information on plaice in this area.

A precautionary TAC in areas IX, X for 2010 was set to 403 t.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Plaice (Pleuronectes platessa) in VIII, IX and X falls under Category 11. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 343 t which is the average of recent catches (2007-2008-2009) with a 15% TAC constraint.

4.10. Sole (*Solea solea*) in Divisions VIIIa,b (Bay of Biscay)

FISHERIES: The French fleet that consists mainly of trawlers and fixed-nets is the major participant in the Bay of Biscay sole fishery with landings being about 90% of the total official international landings over the historical series. Most of the remaining part is usually landed by the Belgian beam trawler fleet. The landings of French fixed net fishery have increased from less than 5% of total landings prior to 1985 to around 60% in recent years. This shift between the fleets has resulted in a change of the selection towards older fish.

Catch by fleet Total landings (2009): 3.6 kt (inshore trawlers 6 %, offshore otter trawlers 18 %, offshore beam trawlers 10 %, fixed nets 66%)

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

The advice is based on an age-based analytical assessment based on landings and CPUE data series from surveys and commercial fleets. Partial discard information is available from 1984 to 2003, but is no longer included in the assessment since 2004 because of the low contribution of discards to the catch and therefore to the assessment. No recruitment indices are available for this stock.

There is a need for fisheries independent data to improve the stock assessment and the estimation of recruitment. This assessment relies on time series of commercial fleets. In addition, the proportion of landings taken by these fleets is decreasing. Commercial data do not provide reliable estimates of incoming year-classes.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	13 000 t	B_{pa} (provisional estimate. MSY $B_{trigger}$ to be re-evaluated prior to the 2012 advice).
	F_{msy}	0.26	F_{max} because no stock-recruitment relationship, limited variations of recruitment, Fishing mortality pattern known with low uncertainty
Precautionary Approach	B_{lim}	Not defined	
	B_{pa}	13 000 t	The probability of reduced recruitment increases when SSB is below 13 000 t, based on the historical development of the stock.
	F_{lim}	0.58	Based on the historical response of the stock.
	F_{pa}	0.42	F_{lim} * 0.72

MANAGEMENT AGREEMENT: A multi-annual plan has been agreed by EU in 2006 (EC Reg. No. 388/2006). The targets of this plan were met last year.

STOCK STATUS:

F (Fishing Mortality)	2007	2008	2009
MSY (F_{msy})	⊖	⊖	⊖
Precautionary approach (F_{pa},F_{lim})	⊕	⊕	⊕

SSB (Spawning Stock Biomass)	2008	2009	2010
MSY ($B_{trigger}$)	⊕	⊖	⊕
Precautionary approach (B_{pa},B_{lim})	⊕	⊖	⊕

The most recent estimates of SSB are close to Bpa (i.e. MSY $B_{trigger}$). The most recent estimates of fishing mortality are below F_{pa}. Recruitment has been stable since 1993.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Less than 4 200 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 5,300 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g. catch stability)	n/a

MSY approach

Following the ICES MSY framework implies fishing mortality to be reduced to 0.26, resulting in landings of 3600 t in 2011. This is expected to lead to an SSB of 16000 t in 2012, corresponding to a 10% increase compared with 2011 SSB.

Following the transition scheme towards the ICES MSY framework implies fishing mortality to be reduced to 0.32 (higher than F_{msy}), resulting in landings of 4200 t in 2011. This is expected to lead to an SSB of 16 000 t in 2012, corresponding to a 5% increase compared with 2011 SSB.

PA approach

The fishing mortality in 2011 should be no more than Fpa corresponding to landings of less than 5300 t in 2011. This is expected to allow SSB to stay above Bpa in 2012.

Management plan

The multiannual plan for the Bay of Biscay sole (EC Reg. No. 388/2006) does not provide any basis for a TAC advice in 2011. The aim of the plan was first to bring the spawning-stock biomass above 13 000 tonnes. In 2009, ICES estimated that this objective had been reached. According to the plan, the Council have to decide on (a) a long-term target fishing mortality rate; and (b) a rate of reduction in the fishing mortality rate for application until the target fishing mortality rate decided under (a) has been reached. The EC has not yet defined the values for items (a) and (b).

ICES has not evaluated this plan

EU Policy paper

The multiannual plan for the Bay of Biscay sole was not evaluated by ICES. If management plan is considered this stock would be classified as category 4. ICES is not giving advice according to this plan.

The current fishing mortality is between F_{pa} and F_{msy}, which corresponds to category 2. This would result in a TAC in 2011 of 4 200 t.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Sole in Divisions VIIIa,b (Bay of Biscay) falls under Category 2. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 4,200 t.

4.11. Sole (*Solea* spp.) - VIIIcde, IX, X

ICES has not assessed this stock and STECF has no access to any stock assessment information on sole in this area.

A precautionary TAC in areas IX, X for 2010 was set to 1094 t.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Sole (Solea spp.) - VIIIcde, IX, X falls under Category 11. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 930 t which is the average of recent catches (2007-2008-2009) with a 15% TAC constraint

4.12. Rays and skates in ICES Subareas VIII and IX

Previous stock summaries and advice for rays and skates has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice for subareas VIII and IX separately. Furthermore, ICES has not issued any new advice since 2008. The stock summary and advice for rays and skates in subareas VIII and IX will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice for these stocks is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

4.13. Catsharks and Nursehounds (*Sciliorhinus canicula and Sciliorhinus stellaris*) in Subareas VIII, IX and X

Previous stock summaries and advice for catsharks and nursehounds has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice for subareas VIII and IX separately. Furthermore, ICES has not issued any new advice since 2008. The stock summary and advice for catsharks and nursehounds in subareas VIII and IX will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice for these stocks is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

4.14. Tope (*Galleorhinus galeus*) in ICES Subareas VIII, IX and X

Previous stock summaries and advice for tope has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice for subareas VIII and IX separately. Furthermore, ICES has not issued any new advice since 2008. The stock summary and advice for tope in subareas VIII and IX will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice for these stocks is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

4.15. Other demersal elasmobranches in the Bay of Biscay and Iberian Waters

Previous stock summaries and advice for demersal elasmobranchs has been provided at the NE Atlantic regional level and at present, STECF is unable to provide additional information and advice for subareas VIII and IX separately. Furthermore, ICES has not issued any new advice since 2008. The stock summary and advice for other demersal elasmobranchs in subareas VIII and IX will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice for these stocks is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

4.16. Anchovy (*Engraulis encrasicolus*) in Division VIII (Bay of Biscay)

FISHERIES: After 5 years of closures the fishery was re-opened in 2010 with a provisional TAC of 7 000 t. Usually the fisheries for anchovy are targeted by trawlers and purse-seiners. The Spanish and French fleets fishing for anchovy in Subarea VIII are spatially and temporally well separated. The Spanish fleet operates mainly in Divisions VIIIc and VIIIb in spring, while the French fleets operate in Division VIIIa in summer and

autumn and in Division VIIIb in winter and summer. Since the beginning of the closure the fleets of both countries has been reduced.

SOURCE OF MANAGEMENT ADVICE: Annual advice on management is provided by ICES using a two-stage Bayesian biomass dynamic model (BBM) assessment The assessment is based 2 survey indices: Daily Egg Production Method (DEPM) and acoustic survey (PELGAS) and commercial catch information.

REFERENCE POINTS: ICES considers that B_{lim} is 21,000 t, the lowest observed biomass in the 2003 assessment, and proposed B_{pa} be set a 33,000 t. There is no biological basis for defining $\mathbf{F}_{lim}$, and it is proposed that $\mathbf{F}_{pa}$ be established between F=1.0 and F=1.2. Because the assessment provides the probability distributions for the SSB, it is possible to estimate directly the risk of the SSB falling below B_{lim}. B_{pa} and F_{pa} reference points may become unnecessary. A provisional value of MSY $B_{escapement}$ is set at 33 000t based on B_{pa}

	Type	Value	Technical basis
MSY Approach	MSY $B_{escapement}$	33 000 t	Provisional value based on B_{pa}
	F_{MSY}	Not defined	
Precautionary approach	B_{lim}	21 000 t	B_{lim}: B_{loss} = 21 000 t (1989 SSB).
	B_{pa}	33 000 t	$B_{pa} = B_{loss} \times \exp(1.645\,\sigma)$.
	F_{lim}	-	Not defined.
	F_{pa}	1.0–1.2	F_{pa}: = F for 50% spawning potential ratio, i.e. the F at which the SSB/R is half of what it would have been in the absence of fishing.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	2009
MSY (F_{msy})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	2010
MSY ($B_{trigger}$)	−	−	+
Precautionary approach (B_{pa},B_{lim})	o	o	+

The closure of the fishery for the last five years due to low biomasses has led to the estimated median SSB in 2010 at 51 400 t which is above B_{lim} with a 100% probability. This implies a recovery of population levels, in comparison with the last 5 years when the fishery was closed due to low biomasses. This recovery reflects good recruitment in 2010 and the most abundant since the recruitment in 2001.

RECENT MANAGEMENT ADVICE:

Advice summary for the period 1st July 2010 –30th June 2011

Management Objective (s)	Landings, 1st July 2010 –30th June 2011
MSY approach with caution at low stock size	Less than 11 100 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 6 000 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

MSY approach

With the objective to maintain the spawning stock biomass above a reference level of MSY $B_{escapement}$ by 2011 then a catch of less than 11 100 t can be taken in the period 1st July 2010 –30th June 2011.

PA approach

To reduce the risk to less than 5% that SSB in 2011 will be below B_{lim}, catch should be less than 6 000 t for the period 1st July 2010 - 30th June 2011.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 5 because this is a short-lived species.

STECF COMMENTS:

STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that anchovy (*Engraulis encrasicolus*) in Division VIII (Bay of Biscay) falls under Category 5. Accordingly STECF notes that the rules specify that a provisional TAC is set and will be changed when new information is available during the year.

In order to reduce the risk to less than 5% that SSB in 2011 will be below B_{lim}, STECF **recommends** that the TAC in 2010 should be less than 6 000 t for the period 1st July 2010 - 30th June 2011.

STECF notes that the catch options for the next year depends very much on the next coming recruitment for which there is no information yet. STECF further notes that ICES is considering the possibility to review the current advice once indications of the next incoming recruitment become available from the autumn survey.

4.17. Anchovy (*Engraulis encrasicolus*) in Sub-area IX

This review relates to anchovy in Division IXa only.

FISHERIES: Fisheries for anchovy takes mainly place by purse-seiners in Subdivision IXa South. Contribution from other fleets in the recent fishery is almost negligible. The fleets in the northern part of Division IXa occasionally target anchovy when abundant, as occurred in 1995. Total catch in 2009 were 3,000t (99% purse-seiners,1% bottom trawlers)

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is trend based.

REFERENCE POINTS: No reference points have been set for this stock

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

Both the most recent survey biomass index for the Portuguese survey and the disappearance of 0- group fish in the landings indicate a declining stock.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Reduce catches at a rate greater than the rate of stock decrease
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Substantial reduction in catch
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	n/a

MSY approach

The stock size shows signs of decrease and no indicators for exploitation status are available. This implies catches should be reduced from recent levels at rate greater than the rate of stock decrease.

PA considerations

The state of the stock is derived from trends in survey indices, landings, effort and lpue as well as age distribution from landings and surveys. Commercial lpue has been relatively stable in recent years, however lpue for a schooling species like this is a weak indicator for stock abundance. In the landings the 0 age group was almost absent in 2009 and low in the most recent years. Scientific surveys indicate declining stock since 2007. The Portuguese Spring survey 2010 showed a marked decline in biomass from 2009 to 2010.

As a first step, a substantial reduction in catches should be taken.

The current regulations should be continued

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock can be classified under category 5 because it is a short lived species. However, because no advice based on a biomass escapement strategy is available, the stock can also be classified under category 9 because the state of the stock is not known precisely, but there are indications of a declining stock. Using the maximum 15% reduction in TAC for this category, the resulting TAC would be 6 800 t. However, it should be noted that TACs have not been restrictive to the fishery.

STECF COMMENTS:

STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that anchovy in Sub-area IXa falls under Category 9, Annex IV, Rule 5(b) inplying a 15% reduction on the 2010 TAC corresponding to a TAC for 2011 of 6 800 t. However, givern that the stock size shows signs of decrease, no indicators for exploitation status are available and recent TACs have not been restrictive, STECF suggest that a reduction in the TAC for 2011 to keep catches below 4,800 t would be a more appropriate management measure for 2011.

As this stock experiences high natural mortality and is highly dependent upon recruitment, STECF agrees with ICES that an in-season management or alternative management measures could be considered. Such measures should, however, take into account the data limitations on that stock and the need for a reliable index of recruitment strength.

STECF also agrees with the ICES consideration that it is important that surveys are continued, in particular the acoustic survey in May and the recently initiated egg survey.

4.18. Anchovy (*Engraulis encrasicolus*) in Sub-area X

ICES has not assessed this stock and STECF has no access to any stock assessment information on anchovy in this area.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Anchovy (Engraulis encrasicolus) in Sub-area X falls under Category 5. Accordingly STECF notes that a TAC in 2011 is not estimable.

4.19. Horse mackerel (*Trachurus trachurus*) in ICES division IXa

The stock summary and advice for horse mackerel (*Trachurus trachurus*) in ICES division IXa will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice on this stock is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

4.20. Horse mackerel (*Trachurus trachurus*) in CECAF areas (Madeira Island)

The stock summary and advice for Horse mackerel in CECAF areas (Madeira Island) will be updated in October 2010 and included in the consolidated STECF review of advice for 2011 for Stocks of Community interest. The most recent STECF advice on this stock is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

4.21. Horse mackerel (*Trachurus trachurus*) in CECAF areas (Canary Islands)

The stock summary and advice for Horse mackerel in CECAF areas (Canary Islands) will be updated in October 2010 and included in the consolidated STECF review of advice for 2011 for Stocks of Community interest. The most recent STECF advice on this stock is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

4.22. Horse mackerel (*Trachurus trachurus*) in ICES Subarea X (Azores Islands

The stock summary and advice for Horse mackerel in CECAF areas (Azores Islands) will be updated in October 2010 and included in the consolidated STECF review of advice for 2011 for Stocks of Community interest. The most recent STECF advice on this stock is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

4.23. Sardine (*Sardina pilchardus*) in VIIIc and IXa

FISHERIES: Most landings are taken by purse-seiners. In Spain, boats target anchovy, mackerel, sardine and horse-mackerel; in summer, part of the fleet switches to tuna fishing; sardine catches are highest in summer and autumn and catches concentrate in southern Galician and western Cantabrian waters. In Portugal, sardine is the main target species but chub mackerel, horse mackerel and anchovy are also landed. The level of discards and slippage is uncertain, with slipping estimates only available for the Portuguese fleet but with a limited coverage in time and extent. Total catch in 2009 was 87,700t (99% purse seine, 1% other gear-types)

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The assessment is an age-based analytical assessment using combined Spanish and Portuguese March acoustic surveys, a DEPM (Daily Egg Production Method) survey series, and catch-at-age data.

REFERENCE POINTS: No reference points are defined for this stock.

STOCK STATUS:

F (Fishing Mortality)

	2007	2008	2009
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	2010
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

SSB has declined since 2006 due to the lack of strong recruitments and SSB in 2010 was 33% below the long-term average. Fishing mortality in 2009 was at the same level as in 2008, being at the historical average. The first estimates of the 2008 and 2009 year-classes indicate that they may be around average. These year classes will contribute to the fisheries until 2012.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	n/a
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 75 000 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g. catch stability)	n/a

MSY approach

MSY reference points have not been defined so far.

PA considerations

Fishing mortality has increased and SSB has decreased in the most recent years despite advice not to increase F since 2002. F should be brought back to where it was before the start of this increase, i.e. the 2002 - 2007 average, which is 0.2. This corresponds to landings of less than 75 000 t in 2011.

Policy paper

In light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 9, because the average estimated abundance in the last two years is 39% lower than the average estimated abundance in the three preceding years. Therefore a 15% decrease in TAC applies. ICES notes that no TAC is set for this stock. Landings for 2009 have been used as basis to calculate the results of a 15% reduction.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Sardine (Sardina pilchardus) in VIIIc and IXa falls under Category 9. STECF furthermore notes that no TAC is set for this stock.

5. Widely distributed and migratory stocks

5.1. European eel (*Anguilla anguilla*)

The text below relates to assessments and advice issued by ICES in 2009. Updated information if available will be published in the STECF Consolidated review of advice for stocks of community interest for 2011 in November 2010.

FISHERIES: The European eel (*Anguilla anguilla* (L.)) is found and exploited in fresh, brackish and coastal waters in almost all of Europe, in northern Africa and in Mediterranean Asia. Eel fisheries are found throughout the distribution area. Fisheries are generally organised on a small scale (a few fishermen catching 1-5 tonnes per year) and involve a wide range of gears. The fisheries are managed on a national (or lower, regional or catchment) level. Landings peaked around 1965 at 40,000 tonnes, since when a gradual decline occurred to a level of 20,000 tonnes in the late 1990s, but throughout the decades, landing statistics cover only about half the true catches. Recent years show a rapid decline in reported catches, to below 10,000 tonnes. Recruitment remained high until 1980, but declined afterwards, to a level of only 2 % of former levels in 2001, and has remained low since. Aquaculture of wild-caught recruits (glass eel) has been expanding since 1980, in Europe as well as in eastern Asia (using European glass eel). Other anthropogenic factors (habitat loss, contamination and transfer of diseases) have had negative effects on the stock, most likely of a magnitude comparable to exploitation. In 2007, eel was included in CITES Appendix II that deals with species not necessarily threatened with extinction, but in which trade must be controlled in order to avoid utilization incompatible with their survival. The listing was due to be become effective in March 2009.

SOURCE OF MANAGEMENT ADVICE: Management advice has been provided by ICES and FAO/EIFAC. The joint ICES/EIFAC working group is the main assessment body.

STOCK STATUS: Abundance of the European eel stock (all stages glass eel, yellow eel and silver eel) is at a historical minimum and continues to decline. Recruitment is also at a historical low level and continues to decline. All glass eel recruitment series show clear and marked reductions since the early 1980s. For the different areas (Baltic, continental North Sea, continental Atlantic, British Isles, and Mediterranean), current recruitment is between 1 and 9% of that observed in the 1970s.

Recruitment in 2008 and 2009 has been especially low. Recruitment of continental North Sea yellow eel has been declining continuously since the 1950s. Recruitment of yellow eels in the Baltic is now less than 10% of that observed in the 1950s and 1970s. Despite the marked stock decline, fishing effort and mortality continues to be high both on juvenile (glass eel) and older eels (yellow and silver eel).

Landings reported to FAO have declined to about 25% of the annual catches during the mid-1960s, although the reported landings values are known to be unreliable. Decreased landings in combination with continuous high fishing mortality are a strong indication of reduced stock size.

REFERENCE POINTS: Precautionary reference points have not been agreed for eel. However, exploitation that leaves 30% of the virgin spawning stock biomass is generally considered to be a reasonable target for escapement. Due to the uncertainties in eel management and biology ICES proposed a limit reference point of 50% for the escapement of silver eels from the continent in comparison to pristine conditions (ICES, 2003). This is higher than the escapement level of at least 40% 'pristine' set by the EU Regulation.

MANAGEMANT OBJECTIVES: EU adopted a management framework for the eel stock in 2007 via EU regulation (EU 1100/2007). The objective of the management framework is the protection and sustainable use of the stock. With the objective to rebuild the eel stock Norway decided in June 2009 to cut the eel quota by 80% in 2009 and to carry out an experimental fishing at a very low level in 2010.

RECENT MANAGEMENT ADVICE:

***Exploitation boundaries in relation to precautionary considerations**:* The abundance of the European eel stock continues to decline at an alarming rate. A concerted effort by all European countries over the distribution area of eel is urgently needed to halt this decline. There are indications that recruitment may be impaired by the current low level of spawning stock size. All types of anthropogenic stresses (e.g., recreational and commercial fishing, barriers to passage, habitat alteration, pollution,) should be minimized to promote stock recovery until there is clear evidence that the stock is increasing. Due to the long life time of eel recovery will be a long-term process.

Given the continued declining abundance of glass eels, ICES reiterates its concern about glass eel stocking programs. The programs involve capture and translocation of eels from one river to another. While stocking programs may benefit specific rivers, these programs risk reducing the contribution that these glass eels could make to sustain the overall European eel stock. because of capture and translocation mortality and reduced

survival in the river where eels are stocked. Fishing and use of glass eel for any purpose should be reconsidered, with intervention only taking place where there is an objective of increasing or protecting the glass eel's contribution to spawner production.

ICES reiterates its previous advice that **"all anthropogenic impacts on production and escapement of eels should be reduced to as close to zero as possible until stock recovery is achieved"**.

STECF COMMENTS: STECF agrees with the ICES advice.

5.2. Hake (*Merluccius merluccius*) in Division Vb (1), VI and VII, and XII, XIV (Northern hake)

The management area covers Skagerrak, Kattegat, IIa, IIIb,c,d, IV, VI, VII, VIII, XII and XIV with separate TAC's for these Divisions.

FISHERIES: Hake is caught in mixed fisheries together with megrim, anglerfish and *Nephrops*. Discards of juvenile hake can be substantial in some areas and fleets. An important increase in landings has occurred in the northern part of the distribution area (Division IIIa, and Subareas IV and VI) in recent years. Since the introduction of the high vertical opening trawls in the mid-1990s, no significant changes in fishing technology have been introduced.

For 2009, landings data from France were not considered reliable. Total landings in 2008 were 48 kt (35 % trawl, 19% gillnet, 22% longline, and 25% mixed gears), and discards (underestimated) 3.5 kt.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. A new assessment model has been adopted. The advice is based on a length based model using commercial catches and surveys indices. Discards are now included in the assessment.

MANAGEMENT AGREEMENT: A recovery plan has been agreed by EU in 2004 (EC Reg. No. 811/2004). The aim of the plan is to increase the SSB to above 140 000 t with a fishing mortality (Fmgt) of 0.25, constrained by a year-to-year change in TAC of 15% when SSB is above 100 000 t. ICES did not evaluate the plan.

A proposal for a long-term plan has been put forward by the EU in 2009 (COM(2009) 122 final). The aim of the proposal is to reach maximum sustainable yield. ICES has evaluated the F_{msy} candidate value proposed for this plan, and found the candidate to be inappropriate.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	0.24	$F_{30\%SPR}$
Precautionary Approach	B_{lim}	Not defined	
	B_{pa}	Not defined	
	F_{lim}	Not defined	
	F_{pa}	Not defined	

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The assessment is indicative of trends only. The spawning biomass has been increasing in recent years. There are also indications that fishing mortality has been decreasing in recent years. Recruitment has been relatively stable over the last two decades

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
Transition to an **MSY approach** with caution at low stock size	Less than 44 800 t
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 44 800 t
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g. catch stability)	n/a

MSY approach

According to ICES MSY approach, catches should be maintained at recent levels, corresponding to landings of 44 800 t (average of 2006 2008). The stock trend is increasing and the exploitation status is unknown.

PA approach

There is no sign of impaired recruitment throughout the assessed period. Therefore, according to the PA approach catches should not exceed recent levels, corresponding to landings of 44 800 t (2006 2008).

Management plan(s)

The TAC corresponding to the current recovery plan (EC Reg. No. 811/2004) cannot be determined as the assessment is only accepted as indicative of trends.

EU Policy paper

In the light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this stock is classified under category 8. State of stock is unknown but trends based assessment indicates an increase in SSB. The resulting TAC increase should not exceed 15%

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown.
With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Hake in Division Vb (1), VI and VII, and XII, XIV falls under Category 8. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of less than 63 300 t.

STECF also agrees with ICES that effective measures to reduce discarding are also needed, given the substantial discards of juvenile hake in some areas and fleets.

5.3. Pollack (*Pollachius pollachius*) in all areas

ICES has not assessed this stock and STECF has no access to any stock assessment information on Pollack in all areas.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Pollack in all areas falls under Category 11. Accordingly STECF notes that the rules for the above category imply a TAC for all areas in 2011 of 13,779 t which is the average of recent catches (2007-2008-2009 = 5,457 t) with a 15% TAC constraint on the 2010 TAC.

5.4. Blue whiting (*Micromesistius poutassou*) in ICES subareas I-IX, XII & XIV

The stock summary and advice for Blue whiting (*Micromesistius poutassou*) in ICES subareas I-IX, XII & XIV will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice on this stock is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

5.5. Horse mackerel (*Trachurus trachurus*) in ICES Divisions IIa, IVa, Vb, VIa, VIIa-c,e-k and VIIIa-e

The stock summary and advice for horse mackerel in ICES Divisions IIa, IVa, Vb, VIa, VIIa-c,e-k andVIIIa-e will be updated in October 2009 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice on this stock is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

5.6. Northeast Atlantic Mackerel (*Scomber scombrus*) - combined Southern, Western and North Sea spawning components)

The stock summary and advice for northeast Atlantic mackerel in ICES Divisions IIa, IVa, Vb, VIa, VIIa-c,e-k andVIIIa-e will be updated in October 2009 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice on this stock is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

6. Elasmobranch resources in the Northeast Atlantic

Advice on elasmobranch resources is provided every two years and the advice for 2009 and 2010 was provided in 2008. The stock summary and advice for elasmobranchs will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice on elasmobranchs is given in the STECF Consolidated review of advice for 2009 (STECF, 2009, EUR 23630 EN).

6.1. General Comments

The stock summary and advice for elasmobranchs will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice on elasmobranchs is given in the STECF Consolidated review of advice for 2009 (STECF, 2009, EUR 23630 EN).

6.2. Spurdog (*Squalus acanthias*) in the North-east Atlantic

The stock summary and advice for spurdog (Squalus acanthias) in the North-east Atlantic will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice on this stock is given in the STECF Consolidated review of advice for 2009 (STECF, 2009, EUR 23630 EN).

6.3. Catsharks and nursehounds (*Scyliorhinus canicula and Scyliorhinus stellaris*) in the north-east Atlantic

The stock summary and advice for *Scyliorhinus canicula and Scyliorhinus stellaris* in the north-east Atlantic will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice on these stocks is given in the STECF Consolidated review of advice for 2009 (STECF, 2009, EUR 23630 EN).

6.4. Basking shark (*Cetorhinus maximus*) in the north-east Atlantic

The stock summary and advice for Basking shark (*Cetorhinus maximus*) in the north-east Atlantic will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community

interest for 2011. The most recent STECF advice on this stock is given in the STECF Consolidated review of advice for 2009 (STECF, 2009, EUR 23630 EN).

6.5. Tope (*Galeorhinus galeus*) in the north-east Atlantic

The stock summary and advice for Tope (*Galeorhinus galeus*) in the north-east Atlantic will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice on this stock is given in the STECF Consolidated review of advice for 2009 (STECF, 2009, EUR 23630 EN).

6.6. Rays and Skates in the north-east Atlantic

The stock summary and advice for Rays and Skates in the North Sea and Celtic Seas will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice on these stocks is given in the STECF Consolidated review of advice for 2009 (STECF, 2009, EUR 23630 EN).

6.7. Porbeagle (*Lamna nasus*) in the north-east Atlantic

The stock summary and advice for porbeagle (*Lamna nasus*) in the north-east Atlantic will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice on this stock is given in the STECF Consolidated review of advice for 2009 (STECF, 2009, EUR 23630 EN).

6.8. Thresher sharks(*Alopias vulpinus & Alopias superciliosus*) in the north-east Atlantic

The stock summary and advice for thresher sharks will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice on these stocks is given in the STECF Consolidated review of advice for 2009 (STECF, 2009, EUR 23630 EN).

6.9. Blue shark (*Prionace glauca*) in the north-east Atlantic

The stock summary and advice for blue shark (*Prionace glauca*) in the north-east Atlantic will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice on this stock is given in the STECF Consolidated review of advice for 2009 (STECF, 2009, EUR 23630 EN).

7. Deep Sea Resources

7.1. Deep-water fish (several species) in IVA, IIIa, Vb, VI, VII, VIII, IX, X and XII.

GENERAL COMMENTS AND DESCRIPTION OF FISHERIES

The term ‘deep-water’ is defined by ICES to include waters of depths greater than 400 m. Deep water in the ICES area covers the deep parts of ICES Sub-areas I, II, III, V-X, XII, and XIV. However, some of the species included as deep-water species in the management advice by ICES are also distributed in more shallow waters, e.g. ling and tusk. Other species/stocks, which have similar depth distributions, e.g. anglerfish and Greenland halibut, are already assessed by ICES in area-specific assessment working groups.

Deep-water covers a huge area from the Arctic north to the sub-tropical south. It also covers ridges and underwater seamounts often with a quite unique biology. Productivity is very low in the deep-water. The

diversity of deep-water life history strategies is considerable, but many species of fish targeted by fisheries are particularly vulnerable to disturbance because they grow slowly, mature late in life, and form aggregations easily accessible to fisheries. Recovery rates are much slower than in shallower waters. The knowledge of central biological characteristics such as stock identity, migration, recruitment, growth, feeding, maturation, and fecundity of most deep-water species still lags considerably behind that of commercially exploited shelf-based species. Such information is required to expand our understanding of the population dynamics of deep-water fishes, which in turn is required to underpin stock assessments.

Fisheries data including length and age compositions, discards, and cpue, are slowly increasing for deep-water stocks but time-series data are often short and are not available in sufficient spatial resolution for some stocks e.g. orange roughy and alfonsinos. VMS data are not readily available for most fleets.

In many cases, information on stock structure of deep-water species is lacking. This year, ICES provides advice on separate stocks of tusk (*Brosme brosme*) on the basis of new genetic evidence considered in 2007, but for the other species there is no conclusive information on stock structure. In those cases "management units" have been used that have previously been suggested on the basis of distribution, life history and biological parameters, and bathymetrical considerations.

Fisheries on deep-water species have developed rapidly and the resources they exploit are generally especially vulnerable to over-fishing. Within the ICES area species/stocks have been depleted before appropriate management measures have been implemented e.g. orange roughy. It is also of concern that the landings statistics available may not reflect the true scale of the recent fishing activity, especially in waters outside national EEZs.

In ICES Division IVa there is a by-catch of Greater silver smelt (*Argentina silus*) in the industrial trawl fishery. A longline fishery targets tusk (*Bosme brosme*) and ling with forkbeard (*Phycis blennoides*) and grenadier as a by-catch. Some deepwater species are landed as a by-catch in the trawl fisheries targeting anglerfish and Greenland halibut.

In ICES Division IIIa there is a targeted trawl fishery for roundnose grenadier (*Coryphaenoides rupestris*) and greater silver smelt. Several deep-water species are also taken as a by-catch in, for instance, the trawl fisheries for northern shrimp.

In ICES Sub-area V there are trawl fisheries targeting blue ling, redfish species, argentine and orange roughy (*Hoplostethus atlanticus*), which have as by-catch a great number of other deep-water species. There are also traditional longline fisheries for ling and tusk, and trawl and gill net fisheries for Greenland halibut and anglerfish.

In ICES Sub-areas VI and VII there are directed fisheries for blue ling, roundnose grenadier, orange roughy, black scabbardfish and deep-water sharks.

In Sub-area VIII there is a longline fishery, which mainly targets greater forkbeard, and trawl fisheries for hake, megrim, anglerfish and *Nephrops* which have a by-catch of deep-water species.

In ICES Sub-area IX some deep-water species are a by-catch of the trawl fisheries for crustaceans. Typical species are bluemouth (*Helicolenus dactylopterus*), greater forkbeard, conger eel (*Conger conger*), blackmouth dogfish (*Galeus melastomus*), kitefin shark (*Dalatias licha*), gulper shark (*Centrophorus granulosus*) and leafscale gulper shark (*Centrophorus squamosus*). There is a directed longline fishery for black scabbard fish (*Aphanopus carbo*) with a by-catch of the Portuguese dogfish (*Centroscymnus coelolepis)* and leafscale gulper shark (*Centrophorus squamosus)*. There is also a longline (Voracera) fishery for *Pagellus bogaraveo*.

In ICES Sub-area X the main fisheries are by handline and longline near the Azores, and the main species landed are red (blackspot) seabream (*Pagellus bogaraveo*), wreckfish (*Polyprion americanus*), conger eel , bluemouth , golden eye perch (*Beryx splendens*) and alfonsino (*Beryx decadactylus*). At present the catches of kitefin shark are made by the longline and handline deepwater vessels and can be considered as accidental. There are no vessels at present catching this species using gillnets. Outside the Azorean EEZ there are trawl fisheries for golden eye perch, orange roughy, cardinal fish (*Epigonus telescopus*), black scabbard fish, and wreckfish .

In ICES Sub-area XII there are trawl fisheries on the mid-Atlantic Ridge for orange roughy, roundnose grenadier, and black scabbard fish. There is a multispecies trawl and longline fishery on Hatton Bank, and some of this occurs in this sub-area, some in Sub-area VI. There is considerable fishing on the slopes of the Hatton Bank, and effort may be increasing. Smoothheads (*Alepocephalus* species.) were previously usually discarded but now feature to a greater extent in the landings statistics.

In ICES Sub-area XIV there are trawl and longline fisheries for Greenland halibut (*Rheinhardtius hippoglossoides*) and redfish that have by-catches of roundnose grenadier, roughhead grenadier (*Macrourus berglax*) and tusk.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

REFERENCE POINTS: Precautionary reference points have not been defined for these stocks.

STOCK STATUS: No update or benchmark stock assessments could be made in 2008, and information on exploitation rates remains uncertain. The information on stock status of deep-water species derives from different sources. In many cases the main source of information is catch rates from the commercial fisheries, although in some cases there is also information from research surveys. A number of research surveys have been initiated in recent years, and these are expected to aid the future knowledge on these species.

MANAGEMENT MEASURES Some fisheries are regulated by unilateral or internationally agreed TACs and these may have reduced exploitation /curbed expansion.

In the NEAFC regulatory area, NEAFC has in recent years introduced measures requiring that effort should be reduced by a total of 35% by 2008 and the EU introduced measures in 2006 that set effort for vessels holding deepwater licences to 80% of the 2003 level.

RECENT MANAGEMENT ADVICE: For a number of deep-water and elasmobranch stocks, the new information available since the last advice in 2006 is too sparse to warrant new advice. This generally refers to situations where only landings information is available from which stock status cannot be derived. In those cases, ICES presents the updated (landings) information but reiterates the advice provided in 2006 and does not provide the full descriptions of the background of the fisheries and the assessment. To improve the knowledge base on these stocks, it is vital to develop indicators of abundance (i.e. surveys, cpue) and/or indicators of exploitation (i.e. fishing effort).

Deep-water stocks have previously been classified by ICES (ICES, 2005) on the basis of longevity and growth rate.

Only in very rare cases did ICES have information on indicators for exploitation pressure (e.g. fishing mortality). The approach to the ICES advice on deep-water species has been largely driven by the interpretation of the available abundance indicators (cpue or survey indicators) and the classification according to life history parameters:

- For species in cluster 1 (highly vulnerable)
    - When cpue information shows declines and life history information indicates that species are highly vulnerable, ICES generally recommends no catches of that species.
- For species in cluster 2 (less vulnerable)
    - When recent cpue is much lower than historical cpue, ICES generally recommends a reduction in catch or a low catch, maintaining that level until there is sufficient information that the species can sustain higher exploitation.
    - When cpue information shows no clear trend, ICES generally recommends recent average catches.
    - When surveys show a clear increase in abundance, ICES generally recommends no increase in current catches.

ICES reiterates that effort should be a driving management tool in these mixed deep-water fisheries. However, in the absence of pressure indicators, ICES has attempted to interpret the available landings and cpue data in a way that could be useful even when effort information is not available. The perceived tendency of the stock indicators (cpue, surveys) has been used to argue for the suggested changes to the landings. While acknowledging that a one-to-one relationship between catches and effort is unlikely ICES, in the absence of information, considers that the suggested reductions in landings would result in reductions of effort.

The ICES advice for deep-water species is provided every second year. The advice is applicable for 2009 and 2010.

These have been supplemented by new advice arising from recent requests to ICES made by NEAFC. New ICES advice on deep-water species will be provided in 2010.

STECF COMMENTS: STECF agrees with the ICES recommendation and considers the proposals as a constructive way forward in the light of uncertainties on the states of these stocks and the likely risks to them. STECF notes that appropriate sustainable exploitation rates for most deepwater species have not been determined and the risks associated with current fishing effort are not quantified. Given the biology of many of these species, very low exploitation rates or zero fishing are likely to be advised in most cases.

STECF once again reiterates its comment that management measures based on effort/fleet regulation are a more appropriate long-term approach for management of these fisheries and consequently fisheries based advice, in addition to that currently given, has value. STECF notes that in its advice for some species, ICES groups together stock components that are characterised by a shortage of data rather than on a biological basis. STECF suggests that in order to provide rational fisheries based advice, there is a need to define groupings, which have a spatial coherence that facilitates management. STECF further suggests that continued efforts should be made to define biological units based on, for example, genetic studies.

ICES has commented in 2006 on the precautionary reference points used for some stocks. Reference points that were previously suggested were: $\mathbf{U}_{lim}$= 0.2* $\mathbf{U}_{max}$ and $\mathbf{U}_{pa}$= 0.5* $\mathbf{U}_{max}$ (where U is the index of exploitable biomass). The ICES SGPA and NAFO proposed these reference points in 1997 for use in data poor situations. However, for most stocks ICES does not consider the available cpue series as suitable for defining $\mathbf{U}_{max}$ because the series are too short and U_{max} is not an index virgin biomass. STECF agrees that this is a valid point but in a data-poor situation and in the precautionary context, these reference points are likely to the best available for these stocks, even though they may underestimate depletion/overestimate recovery in relation to actual U_{max}.

STECF notes that in any scheme to reduce existing fisheries in the short-term, attention would need to be paid to potential effort displacement into other neighbouring fisheries on the continental shelf. STECF further notes that several of these deep-water fisheries take place in international waters outside national or EU jurisdiction. Hitherto this has rendered it difficult to enforce management measures for these fisheries.

7.2. Alfonsinos/Golden eye perch (Beryx spp.)

FISHERIES: The section deals with two species, *Beryx splendens* and *B. decadactylus.*

Most of the landings of Beryx are from hand-lines and long-lines within the Azorean EEZ of Sub-area X and by trawl outside the EEZ on the Mid-Atlantic Ridge. The trawl fishery landings refer to both species combined. The general absence of data on species composition of the catches and biological parameters are important limiting factors for the knowledge of these fish stocks. Underreporting of catches from international waters is suspected.

Alfonsinos aggregate in shoals, often associated with seamounts, and fisheries have, historically, had high catch rates once the shoals are located. As a consequence of this spatial distribution, their life-history and aggregation behaviour, these species can only sustain low rates of exploitation; localized sub-units of the population can be quickly depleted, even within a single season. To prevent depleting localised aggregations that have not yet been mapped and assessed, ICES has advised that the exploitation of new seamounts should not be allowed.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

STOCK STRUCTURE: For both species the stock structure is uncertain. They are distributed over a wide area, and may be composed of several populations.

REFERENCE POINTS: No precautionary reference points have been proposed for the stock(s) of Alfonsino/golden eye perch in the NE Atlantic, due to the lack of appropriate data.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	2009
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

Assessment data are sparse and reliable assessments are not possible at present. The most recent data (2008 and 2009 landings) do not change the perception of the stock.

RECENT MANAGEMENT ADVICE:

The current ICES advice for the fishery, first given in 2008, is that these fisheries should not be allowed to expand. Further a reduction in catches should be considered until such time there is sufficient scientific information to prove the fishery is sustainable.

STECF COMMENTS:

STECF agrees with the ICES assessment that the state of the stock is unknown and the ICES advice that these fisheries should not be allowed to expand, and, in light of the vulnerability of deep sea species, that a reduction in catches should be considered until such time there is sufficient scientific information to prove the fishery is sustainable. STECF interprets this to mean that F should be less than or equal to F_{msy}.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that these stocks (*Beryx splendens* and *B. decadactylus*) fall under Category 11.

Accordingly STECF notes that the rules for the above category imply that the TAC in 2011 should be adjusted towards recent real catch levels but should not be changed by more than 15% per year. The average catches over the 3 years 2007 - 2009 amount to 367 tonnes, implying a 12% increase on the current TAC (TAC_{2010} = 328 tonnes). However STECF considers such an increase inappropriate in light of the scientific advice that a reduction in catches should be considered until such time there is sufficient scientific information to prove the fishery is sustainable.

Special request to STECF on Alfonsinos.

STECF is requested to advise whether there are any shortcomings in obligatory data sampling (data collection framework) concerning this stock.

STECF response

STECF is not aware whether there are any shortcomings in obligatory data sampling (data collection framework) concerning this stock.

7.3. Ling (*Molva molva*)

FISHERIES: Ling is primarily fished in the depth range 200-500 m, though it is also found in shallower depths. This species does not have such extreme low productivity and high longevity as typical deep-water species, though specific data for many areas are lacking. The major fisheries are the longline and gillnet fisheries, but there are also by-catches in other gears, i.e. trawls and handline.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

STOCK STRUCTURE: There is insufficient scientific information to establish the extent of putative stocks; however, ling may be sufficiently isolated at separate fishing grounds to be considered as individual management units. On this basis ICES advice is presented for the following management units:

- Divisions I and II (Arctic)
- Va (Iceland)

- Vb (Faroes)
- IIIa, IVa, VI, VII, VIII, IX, XII, and XIV (other areas).

7.3.1. Ling (*Molva molva*) in Divisions I and II (Arctic)

REFERENCE POINTS: No reference points have been set for this assessment unit.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	2009
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

While no reliable assessment can be presented for this assessment unit and fishing possibilities cannot be projected, the interpretation of the information of the stocks has changed since the 2008 advice. This has been due to the separation of the cpue series into a number of different gears whose effort series are no longer comparable through time. Catches since 2000 do not appear to have had a detrimental effect on the stock as the cpue has steadily increased over the period.

RECENT MANAGEMENT ADVICE: ICES has advised that catches are constrained to 8000 t until such time as there is sufficient scientific information to prove the fishery is sustainable. (Note: preliminary catches in 2009 were 8,406 tonnes)

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown and the ICES advice that catches be constrained to 8000 t until such time there is sufficient scientific information to prove the fishery is sustainable.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that this stock falls under Category 6. Accordingly STECF notes that the rules for the above category imply that as available abundance information does not adequately reflect changes in stock abundance, an unchanged TAC applies.

7.3.2. Ling (*Molva molva*) in Va (Iceland)

REFERENCE POINTS:

No reference points have been defined for this assessment unit.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	2009
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?

Precautionary approach (B_{pa},B_{lim})	?	?	?

No reliable assessment is available for this assessment unit and fishing possibilities cannot be projected, however the available 2008-2009 data (landings, survey, and cpue) do not change the perception of the stock. A 'survey trends' based assessment is conducted; this is based on trends in the Icelandic March groundfish survey. Surveys indicate that the overall biomass is currently relatively high in the available time series although it has declined in recent years. The overshoot in the agreed TAC for ling (for the Icelandic fleet) is a result of the allowed, albeit limited, ITQ exchange of one species for another. While this has the objective of limiting discarding and misreporting, for relatively small stocks with small TAC, it may result in serious overfishing in the long-term.

RECENT MANAGEMENT ADVICE: The advice for the fishery, given in 2008, remains appropriate: ICES recommends constraining catches to 7500 t (recent average 2006 2007) , until such time there is sufficient scientific information to prove the fishery is sustainable. (Preliminary landings for 2009 are 10,942 tonnes).

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown.

STECF notes that in the period 2001-2006 the abundance information from the icelandic survey indicate that the stock was increasing at a time when landings averaged about 5,000 t. STECF also notes that over the period 2006 to 2008 landings increased to about 7,500 t on average and the stock declined. Hence STECF advises that in the short-term an annual catch of about 5,000 t for ling in Va would be appropriate.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that this stock falls under Category 6.

STECF notes that the available abundance information does not indicate a greater than 20% change in stock abundance in the last 2 years compared to the previous three years. As a result STECF notes that a TAC cannot be set according to any of the rules specified in Annex IV of COM(2010) 241 FINAL.

7.3.3. Ling (*Molva molva*) in Vb (Faroes)

FISHERIES: The major fishery are the Faroese and Norwegian longline fisheries, but there are also bycatches by other gears, including trawls, gillnet, and handline. In recent years Faroese landings have accounted for about 60 to 70% of the total landings; of these around 60% are taken by longline, partly in directed ling fisheries, and 40% as bycatch by trawlers in fisheries for other groundfish. The Norwegian longliners catches have been declining for the last 3 years and take about 30 40% of the total ling landings. Other nations catch ling as a bycatch in trawl fisheries, contributing about 1 to 2% of total landings.

REFERENCE POINTS: No reference points have been defined for this assessment unit.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	**2008**	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

Stability in landings and trends in abundance indices suggest that ling in Division Vb has been stable since the middle of the 1980's, however historical levels of the stock are uncertain.

RECENT MANAGEMENT ADVICE: ICES advises that effort should not increase and that a reduction in catches should be considered in order to be consistent with MSY.

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown, and the ICES advice that there should not be any increase in effort, and that a reduction in catches should be considered.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), ICES has categorised this stock under Category 6 however STECF advises that, as no advice is given on an appropriate catch level, this stock falls under Category 11.

Accordingly STECF notes that the rules for Category 11 implies the TAC in 2011 should be adjusted towards recent real catch levels but should not be changed by more than 15% per year. The average catches over the 3 years 2007 - 2009 amount to 4,244 tonnes, implying a 2% increase on the landings in 2009. STECF consider such an increase inappropriate in light of the scientific advice that a reduction in catches should be considered.

Special request to STECF on Ling in Vb

STECF is asked to verify the classification in the "policy category".

STECF response

STECF considers that as no advice is given on an appropriate catch level, ling in Vb falls under Category 11 (see STECF comments above).

7.3.4. Ling (*Molva molva*) in IIIa, IVa, VI, VII, VIII, IX, XII, and XIV (Other areas)

FISHERIES: The major directed fishery for ling in Divisions IVa and Subarea VI is by Norwegian longline. The bulk of the landings from other countries are bycatches in trawl fisheries mainly directed at roundfish or deep-sea species. The landings from the central and southern North Sea (IVb,c) are bycatches in various other fisheries. In Subarea VII the main landings are generated by Norwegian and some Spanish longline fisheries. In Subareas VIII, IX, XII, and XIV all landings are bycatches in various fisheries.

REFERENCE POINTS: No reference points are defined for this assessment unit.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

While no reliable assessment is available for this assessment unit and fishing possibilities cannot be projected, the historic cpue data suggest that the stock was stable between 2003 and 2008. The current interpretation is based on a revision of the cpue series does not suggest a decline in the stock, nor does current exploitation appear to be detrimental to the stock. However recent levels of exploitation, relative to historic levels, are unknown.

RECENT MANAGEMENT ADVICE: ICES advises that catches in these Subareas should be kept at the level of the average catch during the period 2003 - 2008 (15 000 t) and further advises that a reduction in catches should be considered in order to be consistent with the MSY

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown and that catches in these Subareas should be kept at the level of the average catch during the period 2003 - 2008 (15 000 t). This is consistent with the agreed TAC for the combined area in recent years.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that this stock falls under Category 6.

Accordingly STECF notes that as available abundance information does not adequately reflect changes in stock abundance, the rules for the above category imply an unchanged TAC in 2011.

7.4. Blue Ling (*Molva dypterygia*).

FISHERIES: The majority of landings are from the Norwegian coast (II), Iceland (Va), Faroes (Vb), west of Scotland and Rockall Trough (VI) and the Mid-Atlantic Ridge and Hatton Bank (XII). Landings from the west of Ireland and Western Approaches (VII) and further south are very small. A major part of this fishery is on spawning aggregations. Landings from Division IIa are mainly catches in a gillnet fishery off mid-Norway, elsewhere this species is taken mainly as by-catch in trawl fisheries.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. No reliable analytical assessments are available.

STOCK STRUCTURE: There is insufficient scientific information to establish the extent of putative stocks; however, blue ling may be sufficiently isolated at separate fishing grounds to be considered as individual management units. On this basis advice is presented for the following management units:

- Subdivisions Va and XIV (Iceland and Reykjanes ridge);
- Subdivisions Vb,VI, and VII (Faroes Rockall and Celtic shelf); and
- Subdivisions I, II, IIIa, IVa, VIII, IX, and XII.

The latter grouping is a combination of isolated fishing grounds and these areas are grouped thus due to lack of data.

Blue ling is more vulnerable to over-exploitation than ling due to a slower growth rate and higher age at first maturity. It is particularly susceptible to rapid local depletion due to its highly aggregating behaviour during spawning. Ageing is a problem in this species, and thus age-structured analytical assessments are unlikely in the short-term.

7.4.1. Blue Ling (*Molva dypterygia*) in Va and XIV

FISHERIES: Blue ling, a gadoid species that grows faster than most deep-water species, is particularly vulnerable to exploitation (fisheries can target the spawning aggregations) and an opportunistic fishery on spawning aggregations account for pulses in landings in the early 1980s and in 1993. Two closed areas to protect spawning aggregations in Division Va were introduced in 2003. Currently it is mostly taken as a bycatch in fisheries for cod, haddock, and saithe in Division Va, however in 2008 and 2009 longliners have started targeting blue ling in Division Va.

REFERENCE POINTS: No reference points have been defined for this assessment unit.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	**2008**	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?

Precautionary approach (B_{pa},B_{lim})	?	?	?

No reliable assessment can be presented for this assessment unit and fishing possibilities cannot be projected. Current data (landings and survey) show an increase in abundance since 2000 and although the time-series is relatively short it contains useful measurements that indicate that the stock has not decreased in recent years. However catches have increased at a higher rate than the survey indices, resulting in estimates of increasing exploitation rate.

RECENT MANAGEMENT ADVICE: ICES advises, as it did in 2008, that there should be no directed fisheries for blue ling in Division Va and Subarea XIV and measures should be implemented to minimize catches in mixed fisheries. Blue ling is susceptible to sequential depletion of spawning aggregations and closed areas to protect spawning aggregations should therefore be maintained and expanded where appropriate.

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown, and that there should be no directed fisheries for blue ling in Division Va and Subarea XIV and that measures should be implemented to minimize catches in mixed fisheries.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that, as no advice is given on an appropriate catch level, this stock falls under Category 11.

Accordingly STECF notes that the rules for Category 11 implies the TAC in 2011 should be adjusted towards recent real catch levels but should not be changed by more than 15% per year. The average catches over the 3 years 2007 - 2009 amount to 4,244 tonnes, implying a 2% increase on the landings in 2009. STECF consider such an increase inappropriate in light of the scientific advice that a reduction in catches should be considered in order to be consistent with MSY.

7.4.2. Blue Ling in Vb, VI and VII

REFERENCE POINTS: No reference points are defined available for this assessment unit.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	**2008**	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach ($\mathbf{F_{pa}}$,$\mathbf{F_{lim}}$)	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

While no reliable assessment can be presented for this assessment unit, the cpue indices indicate that the current abundance of the stock is much lower than the initial level prior to the fishery. In the last 10 years there is no obvious response from the stock to the fishery.

RECENT MANAGEMENT ADVICE:

ICES advises that there should be no directed fisheries for blue ling in Subdivision Vb, and Subareas VI, and VII and an effort should be made to limit bycatch in the mixed fishery and that a reduction in catches should be considered in order to be consistent with MSY.

ICES also point out that blue ling is susceptible to sequential depletion of spawning aggregations and advise that current closed areas to protect spawning aggregations should be maintained, with new closed areas identified and implemented where appropriate. In addition ICES has suggested that;

- the EU management unit for this stock should be expanded to include the western part of Hatton Bank (ICES Division XIIb) as this is contiguous with the eastern part of Hatton Bank (ICES Division VIb).
- the EU part of Division Vb be part of the TAC area corresponding to the stock assessment unit (e.g. Subdivision Vb, and Subareas VI and VII) instead of being included in the EU TAC for II and IV.

In 2009, EU protection areas were introduced for spawning aggregations of blue ling on the edge of the Scottish continental shelf and at the edge of Rosemary Bank (both in Division VIa). Entry/exit regulations apply and vessels cannot retain >6 t of blue ling from these areas per trip. On retaining 6 t vessels must exit and cannot re-enter these areas before landing. These vessels cannot discard any quantity of blue ling. Consequently, there remains some directed fishing for blue ling. The effectiveness these protection areas on reducing catches from directed fishing should be examined.

In 2008, NEAFC requested ICES to compile data on documented spawning/aggregation areas in the NEAFC Convention Area. Five main areas of spawning for southern blue ling (Vb, VI, VII and XIIb) were identified:

- along the continental slope to the NW of Scotland in VIa (EU waters).
- on, and around, and to the NW of Rosemary Bank mainly in VIa (EU waters).
- on the southern and SW margins of Lousy Bank in VIb and Vb (NEAFC Regulatory Area/EU waters/Faroese waters).
- on the NE margins of Hatton Bank (NEAFC Regulatory Area)
- eastern and southern margins of the Hatton Bank in VIb and XIIb (NEAFC Regulatory Area).

There is already a closed area on Hatton Bank to protect cold-water corals and this has recently been extended. This should be scrutinized to determine the extent of protection afforded to spawning aggregations of blue ling, and if necessary extended further.

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown, and that there should be no directed fisheries for blue ling in Subdivision Vb, and Subareas VI, and VII and an effort should be made to limit bycatch in the mixed fishery. A reduction in catches should be considered in order to be consistent with the MSY.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that, as no advice is given on an appropriate catch level, this stock falls under Category 11.

Accordingly STECF notes that the rules for Category 11 implies the TAC in 2011 should be adjusted towards recent real catch levels but should not be changed by more than 15% per year. The average catches over the 3 years 2007 - 2009 amount to 4,093 tonnes, implying a 52% increase on the landings in 2009. STECF consider such an increase inappropriate in light of the scientific advice that a reduction in catches should be considered in order to be consistent with MSY.

In addition STECF notes that the additional information available on spawning aggregations of blue ling is sufficient to identify specific spawning aggregations on Hatton Bank, Rosemary Bank, Lousy Bank and the continental slope to the NW of Scotland (see section11.1 of the STECF/PLEN-08-02 report).

Special request to STECF on blue ling in Vb, VI and VII

Extracts of Council and Commission statements in 2009 concerning Blue ling

> The Commission takes a note of relevant scientific information regarding the stock of blue ling (areas VI, VII). It will submit this information to the relevant scientific bodies to assess if the new information would give rise to modify allocations for this stock during 2010.

a) According to a statement made at December Council 2009, the Commission has to ensure that new scientific in formation available on blue ling will be fed into the stock management process: A series of French tally book data were submitted to ICES and analysed in the WG-DEEP working group. STECF is requested to give a view on the robustness of this data and on the extent to which it has improved ICES' scientific advice.

b) ICES advice is composed of a number of elements which are not ready for use in management: ?

-no direct fishery

- limitations of by-catches

- consider reduction in catches in order to be consistent with MSY

- maintain existing and introduce new area closures to protect spawning aggregations.

ICES considers this advice to fall into category 6.

STECF is requested to class the stock of blue ling according to the following table (taken from chapter 1.2.4 to which ICES refers) and advise on the corresponding catch:

	No overfishing	**Overfishing or Unknown Exploitation Status**
Decreasing stock trend	Reduce catch from recent level at rate of stock decrease	Reduce catch from recent level at rate greater than the rate of stock decrease
Stable stock trend	Maintain catch at recent level	Reduce catch from recent level
Increasing stock trend	Increase catch from recent level at rate of stock increase	Maintain catch at recent level

c) Following suggestions in the advice, the Commission is considering a rearrangement of TAC areas as follows:

TACs status quo	**TACs revised 2011 2012**
EC and international waters II, IV, V DK, DE, IE, FR, UK, Others	EC and international waters II, IV_____ DK, DE, IE, FR, UK, Others
VI, VII DE, EE, ES, FR, IE, LT, PL, UK, Others	VI, VII, *EC waters Vb, XIIb* DE, EE, ES, FR, IE, LT, PL, UK, Others

STECF is requested to confirm, if appropriate, that such a rearrangement would facilitate stock management in accordance with scientific advice.

STECF response

a) STECF understands that French tally-book data were used in the trends-based assessment carried out at ICES WGDEEP in 2010. This is a scientifically valuable index based on data at the individual haul level, However it may give a misleading indication of stock status in that data are only available back to 2000. Used in conjunction with other French trawl abundance indices (which go back to more or less to the start of exploitation), blue ling exploitable biomass remains at a very low level historically, albeit with some evidence of slight recovery in recent years (the latter supported by abundance indices from French tally book data, Scottish and Irish deep-water surveys). However, it should be noted that the confidence limits about these indices (including the French tallybook index) are very wide (see WGDEEP 2010 Report)

b) Given that exploitable biomass continues to be at a very low level historically and that evidence of a recent slight increase is based on indices with wide confidence limits, STECF considers that the stock is appropriately classified by the category “stable stock trend” with the recommendation to “reduce catch from recent level”. This is in line with the advice from STECF and ICES.

c) STECF notes that a major issue concerning this request is likely to be that Hatton Bank straddles VIb and XIIb and the fisheries for blue ling occur in Vb,VI,VII and XIIb.

For blue ling, ICES treats Divisions Vb , Subareas VI, VII as a single discrete stock, although this may be to maintain historical consistency, rather than being based on strong scientific evidence for stock discreetness.

For blue ling Including Vb would be in accordance with the scientific advice but the inclusion of XIIb may be a problematic. STECF suggests that to address the issue further, a way forward would be for Dg Mare to request ICES to revisit the stock definition of blue ling in Vb, Vi and VII and to evaluate whether XIIb should be included for assessment purposes. Management areas could then be revaluated in light of ICES’ decision.

7.4.3. Blue ling (*Molva dypterygia*) in other areas (I, II, IIIa, IVa, VIII, IX, and XII)

FISHERIES: Blue ling has been an important bycatch in trawl fisheries on the Hatton Bank (Division XIIb) while in other areas it is taken in small quantities.

REFERENCE POINTS: No reference points have been defined for this assessment unit.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	**2008**	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

No reliable assessment can be presented for this assessment unit and fishing possibilities cannot be projected, nor does the available new data (landings) change the perception of the stock.

Revisions in Spanish landings for Division XIIb (Hatton Bank) for the period 2004-2009 shows that the fishery in this area has not declined as much as had been previously reported, however trends in landings continue to suggest serious depletion in, at least, Subarea II.

RECENT MANAGEMENT ADVICE: While no reliable assessment can be presented for this assessment unit, and fishing possibilities cannot be projected, ICES advise that the new landings data do not change the perception of the stock or the appropriateness of the advice for the fishery given in 2008: There should be no directed fisheries for blue ling; management measures should be implemented to minimize bycatch in mixed fisheries; and closed areas to protect spawning aggregations should be maintained and expanded where appropriate". In addition a reduction in catches should be considered until such time there is sufficient scientific information to prove the fishery is sustainable.

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown, and the ICES advice that there should be no directed fisheries for blue ling; that management measures should be implemented to minimize bycatch in mixed fisheries; that closed areas to protect spawning aggregations should be maintained and expanded where appropriate; and that a reduction in catches should be considered until such time there is sufficient scientific information to prove the fishery is sustainable.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that, as no advice is given on an appropriate catch level, this stock falls under Category 11.

Accordingly STECF notes that the rules for Category 11 implies the TAC in 2011 should be adjusted towards recent real catch levels but should not be changed by more than 15% per year. The average catches over the 3 years 2007 - 2009 amount to 778 tonnes, implying a 13% increase on the landings in 2009. STECF consider such an increase inappropriate in light of the scientific advice that a reduction in catches should be considered until such time there is sufficient scientific information to prove the fishery is sustainable.

7.5. Tusk (*Brosme brosme*)

FISHERIES: Tusk is primarily fished in the depth range 200-500 m, though it is also found at shallower depths. Tusk is more vulnerable to overexploitation than ling due to a slower growth rate and higher age at first maturity. The majority of landings are from ICES sub-areas IIa, IIIa, from along the Norwegian coast of IVa, Va (around Iceland), and Vb (around Faroe Islands). This species is taken mainly in long line fisheries, and most of the catches are by-catches in ling fisheries. Tusk is also taken as by-catch in bottom trawl fisheries.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

STOCK STRUCTURE: This year, ICES provided advice on separate stocks of tusk on the basis of new genetic evidence considered in 2007. On this basis advice is presented for the following revised management units:

- I and II (Arctic)
- Division Va and Subarea XIV
- The Mid-Atlantic Ridge (Division XII excluding XIIb)
- Subarea VIb (Rockall)
- IIIa, IV, Vb,VIa, VII, VIII, IX, XIIb, . (This latter grouping is a combination of isolated fishing grounds and these areas are grouped due to their mutual lack of data.)

7.5.1. Tusk (*Brosme brosme*) in Divisions I and II (Arctic)

REFERENCE POINTS: No reference points have been defined for this assessment unit.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	**2008**	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

No reliable assessment can be presented for this assessment unit and fishing possibilities cannot be projected, however a reinterpretation of the historic cpue data suggest that recent catch levels (2005-2008) in Subareas I and II seem to have no detriment effect on the stock, however the level relative to historic level is unknown.

RECENT MANAGEMENT ADVICE: ICES advise that catches should be less than 9,900 t and a reduction below recent levels should be considered in order to be consistent with MSY.

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown. However noting that catches in the region of 9,900 t during the period 2005 through 2008 seem not to have had a detrimental effect on the stock, STECF therefore advises that catches in 2011 should be restricted to less than 9,900 t. This is in line with the ICES advice.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), ICES has categorised this stock under Category 6. Accordingly STECF notes that in the absence of information to indicate whether the overall stock trends are increasing or decreasing, the rules for Category 6 imply that the TAC in 2011 should remain unchanged. STECF notes that there is no TAC set for tusk in these areas.

7.5.2. Tusk (*Brosme brosme*) in Division Va and Subarea XIV

REFERENCE POINTS: At present no reference points have been proposed for this assessment unit.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	**2008**	**2009**
MSY (F_{msy})	?	?	?

Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The ICES assessment of this stock indicates that recruitment has increased from a low level in 1995 and that there are indications that fishing mortality may have declined in recent years. Surveys indicate that the overall biomass is increasing but consists mostly of small individuals.

RECENT MANAGEMENT ADVICE: Surveys indicate that the overall biomass is increasing but consists mostly of small individuals. ICES advises that catches be constrained to 6,000 t or less as this will result in fishing mortality close to $F_{0.1}$ in 2011 and result in an increase in spawning stock biomass.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that this stock falls under Category 7.

Accordingly STECF notes that the rules for Category 7 implies the TAC in 2011 should be reduced by up to 15%. A total allowable catch of 6,000 tonnes in 2011 is a 14.3% reduction on the 2010 level.

7.5.3. Tusk (*Brosme brosme*) on the Mid-Atlantic Ridge (Division XII excluding XIIb)

REFERENCE POINTS: No reference points have been defined for this assessment unit.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	**2008**	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

Tusk is a bycatch species in the gillnet and longline fisheries in Sub-divisions $XIIa_1$ and $XIVb_1$. Russia reported catches of tusk in 2005, 2007 and 2009. During the period 1996-1997 Norway also had a fishery in this area.

NEAFC recommends that in 2009-2010 the effort in areas beyond national jurisdiction shall not exceed 65% of the highest level for deep-water fishing in previous years.

RECENT MANAGEMENT ADVICE: The 2008-2009 data (landings) for this stock give no reason to change the advice from that given in 2008: "*Fisheries should not be allowed to expand*" and measures should be considered to limit occasional high levels of bycatch, in order to be consistent with MSY

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown, and the ICES advice that Fisheries should not be allowed to expand" and measures should be considered to limit occasional high levels of bycatch, in order to be consistent with MSY.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that, as no advice is given on an appropriate catch level, this stock falls under Category 11.

Accordingly STECF notes that the rules for Category 11 implies the TAC in 2011 should be adjusted towards recent real catch levels but should not be changed by more than 15% per year. The average catches over the 3 years 2007 - 2009 amount to 10 tonnes, implying a 10% increase on the landings in 2009. STECF consider such an increase inappropriate in light of the scientific advice that a reduction in catches should be considered in order to be consistent with MSY.

Special request to STECF on tusk in Subarea XII excluding XIIb

STECF is requested to advise what measures can be put in place to limit occasional high levels of by-catch.

STECF response

STECF is unable to suggest any specific technical measures that could be put in place to limit occasional high levels of by catch other than to introduce a measure where the by-catch proportion exceeds a certain limit, vessels should leave the area. STECF is unable to propose what an appropriate by-catch limit would be appropriate for such a measure at this time. Alternatively, consideration could be given to setting a zero TAC to prevent ad hoc short term directed fishing which can be masked by bycatch regulations.

7.5.4. Tusk (*Brosme brosme*) in Subarea VIb (Rockall)

REFERENCE POINTS: No reference points have been defined for this assessment unit.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The state of the stock is unknown. ICES does however point out that its interpretation of available stock information has changed since 2008 *because the cpue was separate in different gears and effort is not comparable through time. Since 2000, autolines have been used and this information is the basis of the advice*.

RECENT MANAGEMENT ADVICE: The historic cpue data were reinterpreted and suggest that catches in Division VIb should be reduced by at least the rate of decline of the cpue.

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), ICES has categorised this stock under Category 6 however STECF advises that, as no advice is given on an appropriate catch level, this stock falls under Category 11.

Accordingly STECF notes that the rules for Category 11 implies the TAC in 2011 should be adjusted towards recent real catch levels but should not be changed by more than 15% per year. As average catches over the 3 years 2007 - 2009 amount to 354 tonnes and result in a 25% decrease from the landings the actual reduction would be constrained at 15%. STECF notes however that as tusk is a bycatch species in the trawl, gillnet and longline fisheries in Subarea VIb (Norway has traditionally landed the largest percentage of the total catch and longliners catch about 90% of the Norwegian landings) the effectiveness of this reduction may be limited.

7.5.5. Tusk (*Brosme brosme*) in IIIa, IV, Vb, VIa, VII, VIII, IX, XIIb (Other areas)

REFERENCE POINTS: No reference points have been defined for this assessment unit.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	**2008**	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
4Precautionary approach (B_{pa},B_{lim})	?	?	?

No reliable assessment can be presented for this assessment unit and fishing possibilities cannot be projected, however a reinterpretation of the historic cpue data suggest that recent catch levels during the period 2002 through 2008 (6 900 t) seem not to have had a detriment effect on the stock.

RECENT MANAGEMENT ADVICE: ICES advises that catches in Divisions IIIa, Vb, VIa XIIb and Subareas IV, VII, VIII, IX in 2011 should be less than 6 900 t, and a reduction from recent levels catches should be considered in order to be consistent with MSY.

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown and that catches in 2011 should be less than 6,900 t.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), ICES has categorised this stock under Category 6. Accordingly STECF notes that in the absence of information to indicate whether the overall stock trends are increasing or decreasing, the rules for Category 6 imply that the TAC in 2011 should remain unchanged. STECF notes that there is no separate TAC set for tusk in these areas.

7.6. Greater silver smelt or argentine (*Argentina silus*)

FISHERIES: Argentine is primarily fished in the depth range 100 to 700 m. The majority of landings are from ICES sub-areas IIa, IIIa, IVa along the Norwegian coast, Va (around Iceland), and Vb (around Faroe Islands). This species is taken mainly in long line fisheries, and most of the catches are by-catches in ling fisheries. This species is also taken as by-catch in bottom trawl fisheries. The Norwegian fishery accounts for the more than 50% of total catches.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. No reliable analytical assessment is available.

STOCK STRUCTURE: There is insufficient scientific information to establish the extent of putative stocks; however, argentine may be sufficiently isolated at separate fishing grounds to be considered as individual management units. On this basis advice is presented for the following management units:

- Sub-area Va (Iceland); and
- Sub-areas I, II, IIIa, IVa, Vb, VI, VII, VIII, IX, and XII (other areas).

The latter grouping is a combination of isolated fishing grounds and these areas are thus grouped due to their mutual of lack of data.

7.6.1. Greater silver smelt (*Argentina silus*) in Va

REFERENCE POINTS: No reference points have been defined for this assessment unit.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	**2008**	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
4Precautionary approach (B_{pa},B_{lim})	?	?	?

Stock definition for greater silver smelt remains unclear. The fishery in Division Va for greater silver smelt is largely driven by market factors and has expanded rapidly since 2007. Subsequently the fishery has changed from a small scale complementary fishery to the redfish fishery to a targeted fishery. More than 70% of greater silver smelt in Division Va is caught in hauls where it is 50% or more of the total catch of the haul. Apart from 1998 when landings reached 13 000 t, catches in Division Va ranged between 2 500-5 000 tonnes (1996-2007). Catches in 2008 amounted to 8 800 t and in 2009 to 11 000 t.

RECENT MANAGEMENT ADVICE: The 2008-2009 data (landings, survey and cpue) show a recent expansion with a targeted fishery. The increase in catch however is not based on a corresponding increase in fishable biomass and this led ICES to strengthen the advice given in 2008*: "Due to its low productivity, greater silver smelt can only sustain low rates of exploitation".* The recently expanded (2008 and 2009) target fishery should be constrained. A suitable reference period prior to the expansion of the fisheries is 2001-2007.

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown, and the ICES advice that due to its low productivity, greater silver smelt can only sustain low rates of exploitation and that the recently expanded (2008 and 2009) target fishery should be constrained.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that, as no advice is given on an appropriate catch level, this stock falls under Category 11.

Accordingly STECF notes that the rules for Category 11 implies the TAC in 2011 should be adjusted towards recent real catch levels but should not be changed by more than 15% per year. As average catches over the 3 years 2007 - 2009 amount to 7 944 tonnes and result in a 27% decrease from the landings in 2009 the actual reduction would be constrained at 15%.

7.6.2. Greater silver smelt (*Argentina silus*) in other areas (I, II, IIIa, IV, Vb, VI, VII, VIII, IX, X, XII and XIV)

REFERENCE POINTS: No reference points have been defined for this assessment unit.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	**2008**	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**

MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The state of the silver smelt resource in "other areas" is unknown. Catches increased considerably in recent years, but were reduced in 2003 in some areas, partly due to introduction of TAC management in EU waters. In Subarea VI the frequency of old fish (20+) in the catches declined significantly after a few years of target fisheries. Such changes suggest high exploitation rates.

RECENT MANAGEMENT ADVICE: The new data (landings and cpue) available give no reason to change the advice from that given in 2008: "Due to its low productivity greater silver smelt can only sustain low rates of exploitation", and a reduction in catches should be considered, in light of survey data indicating a recent decline.

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown, and the ICES advice that due to its low productivity, greater silver smelt can only sustain low rates of exploitation and a reduction in catches should be considered, in light of survey data indicating a recent decline.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that, as no advice is given on an appropriate catch level, this stock falls under Category 11.

Accordingly STECF notes that the rules for Category 11 implies the TAC in 2011 should be adjusted towards recent real catch levels but should not be changed by more than 15% per year. As average catches over the 3 years 2007 - 2009 amount to 31 370 tonnes and result in a 14% increase on the landings in 2009 (31 730 tonnes – provisional). STECF consider such an increase inappropriate in light of the scientific advice.

Special request to STECF on greater silver smelt (Argentina silus in (I, II, IIIa, IV, Vb, VI, VII, VIII, IX, X, XII and XIV)

STECF is requested to advise whether data analysis suggests decreasing stock trend, thus putting the stock in category 9 rather than 11.

ICES states that improved data sampling from EU fisheries would be beneficial. STECF is requested to advise whether there are any shortcomings in obligatory data sampling (data collection framework) concerning this stock.

STECF observations

According to the Data Collection Framework (DCF) Implementation Decision (2008/949/EC and 2010/93/EU), greater silver smelt (argentines) have to be sampled in ICES areas IV, V, VI, VII (excluding d), VIII, IX, X, XII and XIV. In terms of age determination data, 50 otoliths per 1000 t landed have to be read (Appendix VII of DCF Decision).

STECF comments and conclusions

The ICES advice notes that "a reduction in catches should be considered, in light of survey data indicating a recent decline." In this respect, STECF considers that Category 9 (decreasing stock trend) is more appropriate than Category 11 (no stock trend) advised by ICES.

STECF notes that apart from Subareas I and II, most of the stock distribution is covered by sampling obligations according to the DCF. However, as approximately 40% of the recent catches (2007-2009 were taken in areas I and II (Norwegian Sea), STECF **recommends** adding the requirement to sample greater silver smelt in areas I and II when revising the DCF Implementation Decision.

As greater silver smelt is by-caught in pelagic (and demersal) fisheries in these areas, onboard sampling schemes should take into account the entire catch composition. STECF notes that the 'concurrent sampling' schemes to be conducted under the DCF should be sufficient to provide estimates on by-catches of greater silver smelt.

7.7. Black scabbardfish (*Aphanopus carbo*)

FISHERIES: Black scabbardfish is caught in two very different fisheries: (1) in waters off Mainland of Portugal (Division IXa) and (2) to the west of British Isles. In the waters off Mainland of Portugal it is taken in a targeted artisanal longline fishery and CPUE data have been relatively stable over the years. To the west of the British Isles it is taken in a mixed species, mainly French trawl fishery along with roundnose grenadier and sharks.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

STOCK STRUCTURE: The stock structure is uncertain. This section deals with a species distributed over a wide area which may be composed of several populations. Three management units are considered:

- northern (Sub-areas V, VI, VII, and XIIb);
- southern (Sub-areas VIII and IX).
- Other areas (Sub-areas I, II, IIIa, IV, X, and XIV)

REFERENCE POINTS: No precautionary reference points have been established for the stock(s) of this species.

STOCK STATUS: The status of the species is unknown. In the northern area, indicators show a decline in abundance since 1990. In the southern area indicators have been relatively stable during the past decade. In the other areas only very small catches have been taken. Due to its low productivity, black scabbardfish can only sustain low rates of exploitation.

RECENT MANAGEMENT ADVICE: Despite the lower landings in recent years, cpue in Areas Vb, VI, VII, and XIIb has declined to about 20% of its initial level. ICES recommends that catches should be constrained to 2000 t (50% of the level before the expansion of the fishery, 1993–1997). The fishery should not be allowed to expand unless it can be shown that it is sustainable.

Cpue in Subareas VIII and IX does not indicate any clear trends, but no information is available before 1996. Recent levels of catches do not appear to have had a negative impact. ICES recommends that catches in these areas should be constrained to 2800 t (average 2003–2007) and to collect information that can be used to evaluate a long-term sustainable level of exploitation.

The fishery in other areas should not be allowed to expand unless it can be shown that it is sustainable.

STECF COMMENTS: STECF **recommends** that in order to reverse the observed decline in the stock of black scabbard in Vb, VI, VII and XIIb, a significant reduction in fishing mortality is required. STECF advises that if fully enforced, the measures advised by ICES may achieve such a reduction.

STECF **recommends** that an attempt be made to harmonise management measures for black scabbard in Vb, VI, VII and XIIb with those for other species taken in the mixed trawl fishery in these areas, particularly deep-water sharks and roundnose grenadier.

For black scabbard in other areas, STECF agrees with the ICES advice.

7.7.1. Black scabbardfish (Aphanopus carbo) in divisions Vb, XIIb and subareas VI and VII

FISHERIES: In Subareas VI, VII, and XII, and Division Vb, black scabbardfish is mainly taken in mixed trawl fisheries along with roundnose grenadier and sharks, although some trawl fisheries can target specific species within the mixed fishery. Due to the mixed nature of the trawl fisheries in Subareas VI, VII, and XII, and

Division Vb any measure taken to manage this species in these areas should take into account the advice given for other species taken in the same mixed fishery.

REFERENCE POINTS: No reference points have been defined for this assessment unit.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	**2008**	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

No reliable assessment can be presented for this assessment unit and fishing possibilities cannot be projected. Whereas in the last 10 years there is not an obvious response from the stock to the fishery it is not known if this catch level is sustainable in the long term. The cpue index indicates that the current abundance of the stock is around 20% of the initial levels (start of the fishery). Under these circumstances there should be no increase in the exploitation above the previously advised landings, and catches should be constrained to 2000 t (50% of the level before the expansion of the fishery, 1993-1997).

RECENT MANAGEMENT ADVICE: ICES advises that under current circumstances "there should be no increase in the exploitation above the previously advised landings, and catches should be constrained to 2000 t (50% of the level before the expansion of the fishery, 1993-1997)".

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that this stock falls under Category 6.

Accordingly STECF notes that the rules for Category 6 implies that where there is evidence that a stock is depleted to a low level compared with historic levels (in this case Lpue is lower than in early years of the fishery), a reduction in TAC as needed to reach F_{msy}, but no greater than 15% would apply.

7.7.2. Black scabbardfish (Aphanopus carbo) in ICES subareas VIII and IX

REFERENCE POINTS: No reference points have been defined for this assessment unit.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	**2008**	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

No reliable assessment can be presented for this assessment unit and fishing possibilities cannot be projected, however lpue series of Division IXa suggest that the biomass has been relatively stable since 1995. (Madeira and Canary Islands are the only known spawning areas of this species in the Northeast Atlantic).

RECENT MANAGEMENT ADVICE:
Data for 2008 and 2009 (landings and cpue) do not change the perception of the stock. Therefore, the advice for the fishery given in 2008 is still appropriate: "*Cpue in Subareas VIII and IX does not indicate any clear trends, but no information is available before 1996. Recent levels of catches do not appear to have had a negative impact. ICES recommends that catches in these areas should be constrained to 2800 t*.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that this stock falls under Category 6.

Accordingly STECF notes that the rules for the above category implies that where abundance information either indicates no change in stock abundance (lpue series of Division IXa suggest that the biomass has been relatively stable since 1995), is not available or does not adequately reflect changes in stock abundance (Cpue in Subareas VIII and IX does not indicate any clear trend), an unchanged TAC would apply.

7.7.3. Black scabbardfish (Aphanopus carbo) in other areas

REFERENCE POINTS: No reference points have been defined for this assessment unit.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	**2008**	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

No reliable assessment can be presented for this assessment unit and fishing possibilities cannot be projected. Data for 2008 and 2009 (landings) do not change the perception of the stock.

RECENT MANAGEMENT ADVICE: The current ICES advice for the fishery, first given in 2008, is that these fisheries should not be allowed to expand. Further a reduction in catches should be considered until such time there is sufficient scientific information to prove the fishery is sustainable.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that this stock falls under Category 11.

Accordingly STECF notes that the rules for Category 11 implies the TAC in 2011 should be adjusted towards recent real catch levels but should not be changed by more than 15% per year. As average catches over the 3 years 2007 - 2009 amount to 84 tonnes and result in a 52% decrease from the landings in 2009 the actual reduction would be constrained at 15%.

7.8. Greater forkbeard (*Phycis blennoides*)

FISHERIES: The landings of greater forkbeard are mainly bycatch from demersal trawl and longline fisheries targeting species such as hake, megrim, monkfish, ling, and blue ling. Since 1988, around 80% of landings came from Subareas VI and VII, and (12%), from Subareas VIII and IX (mainly from VIII). Fluctuations in landings are probably the result of changing effort on different target species and/or market prices and may not necessarily be linked with changes in forkbeard abundance.

TACs are set separately for a) ICES subareas I, II, III and IV, b) ICES subareas V, VI and VII, c) ICES subareas VIII and IX and d) ICES subareas X and XII.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

REFERENCE POINTS: No reference points have been established for the stock(s) of this species.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The biomass index for Division VIa has fluctuated without any consistent trend since 2000 however the Spanish survey on Porcupine Bank indicates a decline from 2005 onwards. It is unclear whether the current level of exploitation is having a detrimental effect on the stock. The time series are short and recent levels are not known relative to historic values.

RECENT MANAGEMENT ADVICE: No reliable assessment can be presented for this stock and fishing possibilities cannot be projected. The 2008-2009 data (landings, surveys and cpue) give no reason to change the advice from that given in 2008: *Fisheries on greater forkbeard should be accompanied by programmes to collect data. The fishery should not be allowed to expand unless it can be shown that it is sustainable ,* and a reduction in catches should be considered, in light of survey data indicating a recent decline.

Fishery should not be allowed to expand, and a reduction in catches should be considered, in light of survey data indicating a recent decline.

Considering the mixed-fishery characteristic of greater forkbeard fisheries, this species should not be managed in a single-species context and any advice should take into account advice on other species/fisheries.

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown.

STECF has been requested to advise whether data analysis suggests decreasing stock trend which would put the stock in category 9 according to the Communication from the Commission (COM (2010) 241 FINAL). STECF considers that various separate stocks of greater forkbeard are covered by this request. Four abundance indices from research surveys are presented in the advice.

The Scottish IBTS survey and Spanish Porcupine survey relate to the TAC given for ICES sub areas V, VI and VII; also the raised abundance estimates (swept area) for the Celtic Sea from the French western IBTS survey. The Spanish survey indicates a decline in CPUE from 2005 to 2008 but a CPUE in 2009 slightly above that for 2008. STECF agrees with ICES that the Scottish survey *has fluctuated without any consistent trend since 2000.* The abundance estimates from the French survey show no clear trend. STECF therefore considers there to be no clear basis to advise the stock is decreasing in this area.

The raised abundance estimates (swept area) from the French western IBTS survey for the Bay of Biscay relates to the TAC given for ICES sub areas VIII and IX. The abundance estimates show no clear trend. STECF therefore considers there to be no clear basis to advise the stock is decreasing in this area.

Therefore, with reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that all stocks of greater forkbeard fall under Category 11. Accordingly STECF notes that the rules for the above category imply a TAC (over all ICES sub areas) in 2011 of 2058 t, (mean of ICES estimated landings for 2007-2009). STECF notes, however that the estimated landings in 2007 were above the TAC for 2007. If the TAC for 2007 is used in the calculation the implied TAC in 2011 is 2023 t.

STECF agrees that fisheries catching Greater forkbeard should not be allowed to expand unless there is information that can be used to evaluate a long-term sustainable level of exploitation.

Special request to STECF on greater forkbeard

STECF is requested to advise whether data analysis suggests decreasing stock trend, thus putting the stock in category 9 rather than 11.

STECF response

STECF notes that data from the Scottish and French Surveys indicates that there are no clear trends over time and therefore considers there to be no clear basis to advise the stock is decreasing in this area. STECF concludes that according to COM(2010) 241 FINAL, greater forkbeard falls under category 11.

7.9. Orange roughy (*Hoplostethus atlanticus*)

FISHERIES: The directed fishery for orange roughy aggregations west of Ireland in Sub-area VII has now ceased. The fishery in Sub-area VI has decreased dramatically since the depletion of the main aggregation on the Hebrides Terrace Seamount in the early 1990s and there has not been a major directed fishery since 2002. Faroese fisheries in Sub-areas VI, XII, and X have ceased and so has an Icelandic fishery in Division Va.

In Sub-area XII, the Faroes dominated the fishery throughout the 1990s, with small landings by France. In recent years, New Zealand and Ireland have targeted orange roughy in this area. There are many areas of the Mid-Atlantic Ridge where aggregations of this species occur, but the terrain is very difficult for trawlers.

Landings have declined to low levels in each management area (VI, VII, and other sub areas).

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

STOCK STRUCTURE: It is not known if individual aggregations are reproductively distinct.

REFERENCE POINTS: No reference points have been established for the stock(s) of this species.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

Orange roughy form discrete spawning aggregations around bathymetric features, which are susceptible to sequential depletion. It is not known if individual aggregations are reproductively distinct. There are juvenile areas on the flat grounds.

Orange roughy catches in Subarea VI increased rapidly and subsequently dropped. Orange roughy cpue in Subarea VI has shown a strong declining trend since early 1990s. It is presumed that the aggregations were fished out.

Orange roughy fisheries in Subarea VII have exhibited a similar pattern to that in VI. High catches have not been sustained by individual fleets and have dropped to low levels, suggesting sequential depletion. Orange roughy cpue in Subarea VII has shown a strong declining trend since the early 1990s. It is unclear if there are unfished aggregations remaining in Subarea VII.

RECENT MANAGEMENT ADVICE:

No directed fisheries for this species and measures to minimize bycatch should be taken.

No reliable assessment can be presented for this stock and fishing possibilities cannot be projected. The new survey data available do not change the perception of the stock. Therefore, the advice for the fishery given in 2008 is still appropriate: *Due to its very low productivity, orange roughy can only sustain very low rates of exploitation. Currently, it is not possible to manage a sustainable fishery for this species. ICES recommends no directed fisheries for this species. Bycatches in mixed fisheries should be as low as possible*."

A zero TAC without allowing a bycatch can potentially lead to discarding if existing fisheries overlap with the distribution of orange roughy. A preliminary examination of French observer data does not suggest that bycatch and discarding of orange roughy is currently significant. In order to protect the species, careful monitoring of the spatial overlap of existing fisheries with the distribution of orange roughy, coupled with the collection of fisheries dependant and independent data (observer programme and surveys) is required.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice for 2011. With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that all stocks of orange roughy fall under Category 10. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 0 t.

Special request to STECF on orange roughy in all areas

STECF is requested by the commission to advise on whether additional measures could be taken to minimise by-catches of orange roughy.

STECF response

Given that orange roughy is a high value species, STECF suggests that consideration be given to setting a zero TAC to prevent ad hoc short term directed fishing which can be masked by bycatch regulations.

Furthermore, STECF agrees with the ICES recommendation for collection and analysis of fisheries dependent and independent data to monitor the overlap of existing fisheries with the distribution of orange roughy and level of any discarding of orange roughy if it exists.

7.10. Roundnose grenadier (*Coryphaenoides rupestris*)

FISHERIES: The majority of international landings are from the Skagerrak (III), Faroes (Vb), west of Scotland and Rockall Trough (VI), west of Ireland and Western Approaches (VII) and the Mid-Atlantic ridge and western Hatton Bank (XII). In most areas, roundnose grenadier is the target species of mixed trawl fisheries.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

STOCK STRUCTURE: This section deals with a species distributed over a wide area, which may be composed of several populations. The scientific basis for stock identification is uncertain. The Wyville-Thomson Ridge and fjord sills, between Western Scotland and the edge of the North Sea slope, could be natural physical boundaries. It is therefore considered that the northern North Sea and the Norwegian Deep could represent a separate unit. The roundnose grenadier on the Mid-Atlantic Ridge and the Hatton Bank are separated by a major oceanic basin and may constitute separate units. This would indicate that the units could be split as:

- Divisions IIIa;
- Divisions Vb, VI, VII, and XIIb (Hatton bank);
- Mid-Atlantic ridge (Subdivisions Xb, XIIc, Va1, XIIa1, and XIVb1) ;
- All other areas (I, II, IV, Va2, VIII, IX, XIVa, XIVb2).

Special request to STECF on Roundnose grenadier in ICES division Vb, subareas VI & VII, ICES division XIIb

a) Following suggestions in the advice the Commission is considering a rearrangement of TAC areas as follows:

TACs status quo	TACs revised 2011 2012
VI, VII, EC waters Vb DE, EE, IE, ES, FR, LT, PL, UK, Others	VI, VII, *XIIb,* EC waters Vb DE, EE, IE, ES, FR, *LV*, LT, PL, UK, Others
VIII, IX, X, XII, XIV DE, IE, ES, FR, LV, LT, PL, UK	VIII, IX, X, *XIIa, XIIc,* XIV *ES, FR*

a) STECF is requested to confirm, if appropriate, that such a rearrangement would facilitate stock management in accordance with scientific advice.

b) STECF is requested to advise whether catches should be guided towards below 6.000 t or whether further reductions are advised.

STECF response

a) STECF notes that a major issue concerning this request is likely to be that Hatton Bank straddles VIb and XIIb and the fisheries for roundnose grenadier occur in Vb,VI,VII and XIIb. For roundnose grenadier , ICES treats Divisions Vb and XIIb, Subareas VI, VII as a single discrete stock, although it should be noted this is not based on strong scientific evidence. STECF considers that the proposed rearrangement of the management area for roundnose grenadier would potentially failitate better management of exploitation on the stock in accordance with scientific advice.

b) STECF assumes that this request relates to roundnose grenadier in Subareas VI and VII and in Divisions Vb and XIIb. To ensure a significant reduction in fishing mortality STECF advises that it may be necessary to ensure that catches are lower than the TAC advised by ICES. STECF is unable to quantify the level of reduction required.

7.10.1. Roundnose grenadier (*Coryphaenoides rupestris*) in Division IIIa

REFERENCE POINTS: No reference points have been established for the stock(s) of this species.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	2009
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

It has not been possible to assess the status of the stock. No directed fishery has taken place since 2007. A decrease in mean length in the catch from 1987 to 2004 and 2005 indicates heavy exploitation on this stock.

RECENT MANAGEMENT ADVICE:

No reliable assessment can be presented for this assessment unit and fishing possibilities cannot be projected. The advice given in 2008 is still appropriate: *constrain catches to 1000 t, which corresponds to the catch level before the expansion of the fishery (1988 1991)* and the fishery should not be allowed to expand beyond this level. The reestablishment of a fishery should be accompanied with monitoring programme to assure exploitation consistent with
MSY.

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown. With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that roundnose grenadier in Division IIIa falls under Category 6. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 850 t. This total differs to that calculated by ICES. The ICES advice did not refer to the rules contained in annex IV to the communication. Rule 4 of annex IV applies indicating an unchanged TAC.

7.10.2. Roundnose grenadier (*Coryphaenoides rupestris*) in Subareas VI and VII and in Divisions Vb and XIIb

REFERENCE POINTS: No reference points have been established for the stock(s) of this species.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

Abundance indices suggest this stock has been stable at low levels in recent years (2003-2009) after a prior period (1988-2003) of strong decline in biomass. Landings are currently well below the agreed TACs for Vb, VI, VII and XIIb. This situation might change from 2010 with the enforcement of EU council regulation 1288/2009 which constrains fishing vessels to land their discards.

RECENT MANAGEMENT ADVICE:

No reliable assessment can be presented for this assessment unit and fishing possibilities cannot be projected.

The 2008-2009 data (landings and cpue) do not change the perception of the stock. Therefore, the advice for the fishery given in 2008 is still appropriate: *Due to its low productivity, roundnose grenadier can only sustain low rates of exploitation. Cpue in the areas has been at a reduced level. ICES recommends that catches should be constrained to 6000 t (50% of the level before the expansion of the fishery, 1990- 1996* . A further reduction in catches from recent levels should be considered in order to be consistent with MSY.

STECF COMMENTS:

STECF **recommends** that in order to reverse the observed decline in the stock of roundnose grenadier in Vb, VI, VII and XIIb, a significant reduction in fishing mortality is required. STECF notes the dramatic decline in the landings of roundnose grenadier from this area from a level of 50,000 t in 2001 to between 8,000 and 9,000 t in 2008 and 2009.

To ensure a significant reduction in fishing mortality STECF reiterates its previous advice that it may be necessary to ensure that catches are lower than the TAC advised by ICES.

Given that roundnose grenadier is taken in a deepwater mixed fishery, there is a need to harmonise management measures to account for the management requirements for other species taken.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that roundnose grenadier in Division Subareas VI and VII and in Divisions Vb and XIIb falls under Category 11. The mean of landings used by ICES (2007-2009) is 9,540 t. These landings include those from ICES division XIIb. TACs for roundnose grenadier are set for a) ICES division Vb, and sub areas VI and VII and b) ICES sub areas VIII, IX, X, XII and XIV. STECF is therefore unable to advise an implied TAC according to the rules in COM (2010) 241 FINAL.

7.10.3. Roundnose grenadier (*Coryphaenoides rupestris*) on the Mid-Atlantic ridge (Xb, XIIc, Va1, XIIa1, and XIVb1)

REFERENCE POINTS: No reference points have been established for the stock(s) of this species.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

RECENT MANAGEMENT ADVICE: No reliable assessment can be presented for this assessment unit and fishing possibilities cannot be projected.
The 2008-2009 data (landings) for this stock give no reason to change the advice from that given in 2008: *The fishery should not be allowed to expand* and a reduction in catches should be considered in order to be consistent with the MSY

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown. With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that roundnose grenadier on the Mid-Atlantic ridge (Xb, XIIc, Va1, XIIa1, and XIVb1) falls under Category 11. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 4417 t, (adjustment towards recent catch lelvels but with TAC adjustment restricted to 15%).

7.10.4. Roundnose grenadier (*Coryphaenoides rupestris*) in all other areas. (I, II, IV, Va2, VIII, IX, XIVa, and XIVb2)

FISHERIES: There have been no directed fisheries, and roundnose grenadier were taken as bycatch in bottom trawls only in small amounts in a number of discrete areas. The total catch in 2009 in other areas amounted to 28 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

The assessment is based on landings data and is indicative of trends. This assessment unit consists of a number of discrete areas in which only very small catches of roundnose grenadier occur.

REFERENCE POINTS: No precautionary reference points have been established for the stock(s) of this species.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	2009
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	2010
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

The state of stock of roundnose grenadier in these areas is unknown.

RECENT MANAGEMENT ADVICE: The fishery should not be allowed to expand, and in the light of the vulnerability of deep sea species a reduction in catches should be considered until such time there is sufficient scientific information to prove the fishery is sustainable.

Management plans
No specific management objectives are known to ICES.

Policy Paper
In the light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this assessment unit is classified under category 11.

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock in these areas is unknown.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that roundnose grenadier in areas I, II, IV, Va2, VIII, IX, XIVa, and XIVb2 falls under Category 11. Accordingly STECF notes that the rules for the above category implies the TAC in 2011 should be adjusted towards recent real catch levels but should not be changed by more than 15% per year. The average catches over the past 3 years amount to 50 tonnes. Therefore following rule 11 implies a 15% increase in TAC for 2011 to 6 tonnes. STECF considers such an increase inappropriate in light of the scientific advice that a reduction in catches should be considered until such time there is sufficient scientific information to prove the fishery is sustainable.

7.11. Red (blackspot) seabream (Pagellus bogaraveo)

FISHERIES: There is a directed hand-line and longline fishery in Sub-areas IX and X. Red seabream have been caught in hook and line fisheries off the Azores since the 16th Century. There are now directed artisanal hand-line as well as longline fisheries in area Xa2. Historically, improvements in fishing technology have taken place in the directed hand-line and longline fisheries. These include the introduction of bottom longlines and bigger fishing vessels. The resulting improvement on fishing efficiency has not been quantified. Red seabream is caught by Spanish and Portuguese fleets in Sub-area IX. The Spanish artisanal longline fishery targeting red

sea began in early 1980s. After 1997 there was a serious decline in landings. In Sub-areas VI, VII and VIII Red seabream appears as by-catch in the longline and trawl fisheries for hake, megrim, anglerfish, and *Nephrops*.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

STOCKS STRUCTURE: The stock structure is uncertain. This section deals with a species distributed over a wide area, which may be composed of several populations. Three units are considered:

- Subareas VI, VII, and XII;
- Subarea IX;
- Subarea X.

This management unit division is supported by information on genetics and tagging.

REFERENCE POINTS: No precautionary reference points have been established for the stock(s) of this species.

STOCK STATUS (ALL STOCKS):

The state of the red seabream in Subareas VI, VII, and VIII is unknown. However catches are well below the historical levels of the 60's and 70's which could indicate that the assessment unit is depleted.

The state of the stock of Red seabream in Subarea IX is unknown.

The state of the stock of Red seabream in Subarea X is unknown.

RECENT MANAGEMENT ADVICE:

Subareas VI, VII and VIII
The new landings data available do not change the perception of the stock. Therefore, the advice for the fishery given in 2008 is still appropriate. The fishery should not be allowed to expand and a reduction in catches should be considered in order to be consistent with the MSY.

EU Policy Paper
In the light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this assessment unit is classified under category 11.

Subarea IX
The 2008-2009 landings data for this stock give no reason to change the advice from that given in 2008. ICES advises that catches in 2011 should be less than 500 t which is a reduction from 2008-2009 landings.

EU Policy Paper
In the light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this assessment unit is classified under category 6. The resulting TAC would be 663 t.

Subarea X
The 2008-2009 landings data for this stock give no reason to change the advice from that given in 2008**.** Catches should be constrained to recent average catches which implies catches of less than 1050 t and a reduction in catches should be considered in order to be consistent with the MSY.

EU Policy Paper
In the light of the EU policy paper on fisheries management (17 May 2010, COM(2010) 241) this assessment unit is classified under category 6. The resulting TAC would be 1050 t.

STECF COMMENTS: STECF agrees with the ICES assessment that the state of these stocks is unknown. STECF notes that there is no information on the appropriate catch levels consistent with MSY.

Sub-areas VI, VII, and XII
With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Red Seabream in Subareas VI, VII and XII falls under Category 11.
Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 183t. This figure is based on adjusting the TAC to recent landings (2007-2009) and is a 15% decrease from the 2010 TAC.

Sub-area IX
With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Red Seabream in Subarea IX falls under Category 6.
Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 780 t (Annex IV Rule 4). This figure is based on an unchanged TAC because there is no evidence to suggest that the stock is overfished. STECF notes that the TAC advised by ICES implies a 15% decrease in TAC.

Sub-area X
With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Red Seabream in Subarea X falls under Category 6 (Annex IV Rule 4).
Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 1136 t. This figure is based on an unchanged TAC.

Special Request to STECF on red seabream in sub area IX

ICES states that current biological sampling is not enough and should be supported by DCF. STECF is requested to advise whether there are any shortcomings in obligatory data sampling (data collection framework) concerning this stock.

STECF response

STECF was unable to address this request in the course of preparing this review.

7.12. Portuguese dogfish (*Centroscymnus coelolepis*) in the north-east Atlantic

The stock summary and advice for Portuguese dogfish (*Centroscymnus coelolepis*) in the north-east Atlantic will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice on this stock is given in the STECF Consolidated review of advice for 2009 (STECF, 2009, EUR 23630 EN).

7.13. Leaf-scale gulper shark (*Centrophorus squamosus*) in the north-east Atlantic

The stock summary and advice for Leaf-scale gulper shark (*Centrophorus squamosus*) in the north-east Atlantic will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice on this stock is given in the STECF Consolidated review of advice for 2009 (STECF, 2009, EUR 23630 EN).

7.14. Kitefin shark (*Dalatias licha*) in the north-east Atlantic

The stock summary and advice for Kitefin shark (*Dalatias licha*) in the north-east Atlantic will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice on this stock is given in the STECF Consolidated review of advice for 2009 (STECF, 2009, EUR 23630 EN).

8. Icelandic and East Greenland resources

8.1. Cod (*Gadus morhua*) in ICES Subarea XIV and NAFO Subarea 1 (Greenland cod)

FISHERIES: Commercial fisheries for Greenland cod started along the Greenland West coast in the 1910's (inshore) and 1920's (offshore). The fishery gradually developed culminating with catch levels above 400,000 tons annually in the 1960s. The East Greenland offshore cod fishery started in the 1950's. Due to overfishing and deteriorating environmental conditions, the stock size declined and the fishery completely collapsed in the early 1990's. The 1990s stock collapse was followed by a decade of very limited fishing, with inshore catches

falling below 1000 t annually and with no directed offshore fisheries taking place. From 2000, the inshore catches have gradually increased from less than 1000 t to 12,000 t in 2007. From 2002, limited offshore quotas have been allocated to Faeroese and Norwegian vessels, and in 2005-2006, Greenland trawlers were allowed limited quotas for experimental cod fishery. In 2007, small quotas were given to Greenland, the EU (Germany and UK), Norway and the Faroe Islands with catches reaching 5000 tons, mainly taken off East Greenland.

In 2009, a TAC of 10,000 tons was allocated to the inshore fisheries. In 2009 the catches from the coastal fleet amounted to 7,672. Relative to 2008 catches decreased in all areas except in Mid Greenland, NAFO division 1E. Offshore catches were taken off south Greenland and amounted to 5,000 tons in 2009. The EU took 50% and Norway took 80% of their quotas. Of the Greenland quotas of 5,400 tons only 2,100 tons was taken.

SOURCE OF MANAGEMENT ADVICE: An Analytical assessment is available up to 1992. After the stock depletion in 1992, the stock trends have been based on research survey indices. Cod in Greenland derives from three stock components, labelled by their spawning areas: I) an offshore Greenland spawning stock, II) inshore West Greenland fiords spawning populations, and III) Icelandic spawned cod that drift to Greenland with the Irminger Current. It is not feasible to sample and assess stock status of the various stock components separately, and they are therefore assessed together.

REFERENCE POINTS: No reference points have been proposed by ICES for this stock.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	**2008**	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

All information indicates that the cod biomass is low compared to prior to 1990s. The offshore component has been severely depleted since 1990, but has started to recover since 2005. An offshore cod directed fishery has started for the first time since 1992 with recent annual catches up to 22 000 t. Surveys indicate a large 2003 year-class, and the first significant year-class since 1985. Following the 2003 year class recruitment has been low. Dense concentrations of large spawning cod have been found off East Greenland in 2007 and 2009. The landings by the coastal fleet component have increased by a factor of ten over the last decade. Inshore recruitment since 2000 shows some signs of improvement. Stock size and exploitation rate of the inshore component are unknown.

MANAGEMENT AGREEMENTS: Greenland and EC established an agreement on offshore fisheries valid from 2007 to 2012. A variable TAC regulation has been agreed. The agreement also provides for a transfer of unutilized quota into future years, should a rapid increase in the stock occur. The management agreement between EC and Greenland has not been evaluated by ICES.

RECENT MANAGEMENT ADVICE: No fishery should take place in 2011 to improve the likelihood of establishing offshore spawning stocks in West and East Greenland.

MSY approach
Further work is required on implementation of the MSY approach.

PA approach
No fishery should take place in 2011 to allow for rebuilding of the spawning stock.

Management agreement

There is no explicit management objectives for the cod stocks in Greenland.A multi-annual management plan should include monitoring the trajectory of the stock, clearly stating specified reopening criteria, and monitoring the fishery when it is reopened.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With the background of the latest scientific assessments and advice and with reference to the Communication from the Commission (COM (2010) 241 FINAL) on a consultation on fishing opportunities for 2011, STECF notes that the Greenland Cod Stock in ICES Subarea XIV and NAFO Subarea 1, falls under Category 10. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 7,500 t. This figure is calculated on the basis of a 25 % reduction in the 2010 TAC.

8.2. Cod (*Gadus morhua*) in ICES Subarea XII

STECF does not have access to any information on cod in ICES Subarea XII

8.3. Cod (*Gadus morhua*) in Division Va (Icelandic cod)

FISHERIES: Icelandic cod is primarily caught by bottom otter trawlers. Historically, the landings of bottom trawlers constituted a larger portion of the total catches than today, in some years prior to 1990 reaching 60% of the total landings. In the 1990's, the landings from bottom trawlers declined significantly and have been just above 40% of the total landings in the last decade. The share of long-lining has tripled over the last 20 years and is now on par with bottom trawling. The share of gill netting has over the same time period declined and is now only half of what it was in the 1980's. Since the size of cod caught by the gillnet fleet is generally much larger than caught by other fleets, this change in fishing pattern is likely to have caused a significant reduction in the fishing mortality of older fish.

Landings of Icelandic cod in 2009 are estimated to have been 183,000 t. Of the total landings 181,300 t were taken by Icelandic fleet but 1,300 t by other nations. The latter includes around 500,000 t of cod taken by the Faroese bottom trawl fleet inside the Faroese EEZ close to the line separating the Icelandic and Faroese EEZ. The trend in landings in recent years is largely a reflection of the TAC that is set for the fishing year (starting 1 Sep and ending 31 Aug).

Estimates of annual cod discards since 2001 are in the range of 0.4-1.8% of weight landed. Mean annual discard of cod over the period 2001-2008 was around 2,000 t, or just over 1% of landings. In 2008, estimates of cod discards amounted 0.8% of the landings. The method used for deriving these estimates assumes that discarding only occurs as high-grading. In recent years, misreporting has not been regarded as a major problem in the fishery of this stock. No study is though available to support that general perspective.

SOURCE OF MANAGEMENT ADVICE: The data used in the assessment are landings-at-age and two age-structured survey indices. The analytical assessment is based on landings and survey data using a forward based statistical catch-at-age model, implemented in AD model builder. The modelling setup is the same as last year. This year both the spring and the fall survey indices are used in the final assessment, last year only the spring survey was used. Landings-at-age data as well as survey indices are considered reliable.

REFERENCE POINTS:

	Type	***Value***	***Technical basis***
MSY Approach	MSY $B_{trigger}$	220 000 t	Set by managers
	Harvest $Rate_{msy}$	0.2	Set by managers
Precautionary Approach	B_{lim}	125 000 t	Bloss
	B_{pa}	Not defined	
	F_{lim}	Not defined	
	F_{pa}	Not defined	

STOCK STATUS: The spawning stock reached a historical low in 1993 (120,000 t) but has since then increased and is estimated to be 300,000 t at present. The current value is very low compared to the early historic period. Fishing mortality has declined significantly and is presently the lowest observed in 40 years. Recent low recruitment combined with historically low weight-at-age result in a very low productivity of the stock at present. The first estimates of the 2008 and 2009 year-classes indicate that they may be around average. These year classes will not contribute to the fisheries until 2012.

	F (Fishing Mortality)		
	2007	**2008**	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	+	+	+
Precautionary approach (B_{pa},B_{lim})	+	+	+

MANAGEMENT AGREEMENTS: Since 1994, TACs for the Icelandic cod stock have been based on a 25% harvest control rule with four amendments on the catch stabilizer. The Icelandic Government has adopted a management plan for the Icelandic cod stock for the next five fishing years based on a 20% exploitation rate. The main objective of the management plan is to ensure an increase the size of the cod stock towards the size that generates maximum sustainable yield and that the spawning stock biomass (SSB) will with high probability (>95%) be above the 220,000 t by the year 2015. The rule is as follows:

TACy+1 == (α B4+,y + TACy)/2, where y refers to the assessment year and B4+ to biomass of 4 year and older cod and α to the harvest rate. α is set to 0.2 when SSB is higher than 220 thousand tonnes (SSBTRIGGER) but set to α = 0.2 SSB y / SSBTRIGGER

ICES evaluated this plan and concluded that the management plan has a high probability of resulting in an increase in the size of spawning stock from the current estimated level by 2015 and beyond.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Landings in 2011**
ICES MSY framework	160,000 t
Transition to an **MSY approach** with caution at low stock size	not applicable
Cautiously avoid impaired recruitment (**Precautionary Approach**)	not applicable
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	160,000 t

Management plan
Following the agreed client management plan implies a TAC of 160,000t in the fishing year 2010/2011. The management plan is in conformity with the ICES MSY framework.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.
With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Icelandic Cod in Division Va falls under Category 4. STECF notes that in accordance with the multi-annual management plan landings in 2011 should be 160,000 t.

STECF notes that cod and haddock are often caught in the same fishing operation. The TAC constraint on cod is expected to result in a significant reduction in fishing mortalities. Recent reduction of fishing mortality for cod is not in line with development of fishing mortality for haddock. Anecdotal information from the fisheries indicates that the restrictions on the landings of cod are presently changing the behavior of the fishing fleet, with fishers trying to avoid catching cod but targeting haddock. Setting the TAC for haddock higher than the ICES advice may result in an increase in discarding and misreporting of cod.

8.4. Haddock (*Melanogrammus aeglefinus*) in Division Va (Icelandic haddock)

FISHERIES: Icelandic haddock is caught around Iceland with bottom otter trawls, Danish seine and longline. The share of different gears in the haddock catches have been varying with time, with the share of longlines and Danish seine increasing in recent years while the proportion of haddock caught in gillnets is now very small. Landings of Icelandic haddock in 2009 are estimated to have been 82,043 tonnes. Of the landings 81,418 tonnes were taken by Iceland with 625 tonnes taken by other nations. For comparison the landings in 2008 were 103,000 t. and in 2007 were 108,000 tonnes which is the highest for over 40 years.

SOURCE OF MANAGEMENT ADVICE: The assessment is based on age-disaggregated landings from 1979 to 2009 and on survey data from the March survey 1985–2010 and the October survey 1995–2009. The model used is an Adapt type model. The assessment does not include discards.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	Not defined	
Precautionary Approach	B_{lim}	Not defined	
	B_{pa}	Not defined	
	F_{lim}	Not defined	
	F_{pa}	0.47	$F_{pa} = F_{med}$ proposed in 2000.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	2009
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	⛔	⛔	⛔

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

SSB increased from 2001 to 2005 due to several strong year classes. Since then the spawning stock has decreased. Fishing mortality is currently above F_{pa}. Recruitment was high for the year classes 1998–2003, with five strong year classes and the 2003 year class very strong. Recruitment has been below the long-term average since year class 2004, with the exception of the 2007 year-class, while year-classes 2008 and 2009 are estimated to be small. In recent years growth has reduced considerably and at the beginning of 2010 the mean weight of most age groups was near a historic low as it has been for the last 3 years. The large 2003 year class grows especially slowly.

MANAGEMENT AGREEMENTS: No specific management objectives are known to ICES.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	Catch in 2011
Transition to an **MSY approach** with caution at low stock size	Not available
Cautiously avoid impaired recruitment (**Precautionary Approach**)	Less than 51,000
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	

PA approach

The fishing mortality in 2001 should be no more than current F_{pa} (0.35) corresponding to landings of less than 51,000 tonnes.

Management Considerations

Work is in progress to evaluate harvest control rule candidates for Icelandic haddock that are in conformity with the ICES MSY framework. This work is based on the same approach as already for Icelandic saithe and cod. A preliminary analysis indicates that the exploitation rate will most likely be less than the F_{pa} value.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Haddock in Division Va falls under Category 9. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 53,600 t which corresponds to a 15% reduction in TAC from 2010.

STECF notes that haddock and cod are often caught in the same fishing operation. The TAC constraint on cod is expected to result in a low fishing mortality for cod. Recent reduction of fishing mortality for cod is not in line with development of fishing mortality for haddock. Anecdotal information from the fisheries indicates that the restrictions on the landings of cod are presently changing the behavior of the fishing fleet, with fishers trying to avoid catching cod but targeting haddock. Setting TAC for haddock higher than the advice will likely result in problems avoiding cod in the haddock fisheries.

8.5. Saithe (*Pollachius virens*) in Division Va (Icelandic saithe)

FISHERIES: Icelandic saithe are caught around Iceland in directed saithe fisheries as well as in mixed demersal fisheries which target cod, mainly with bottom otter trawls and at a smaller proportion with gill nets and by jigging. Landings of saithe in Icelandic waters have peaked at 102,000 t in 1991, decreased to 31,000 t in 1998 and increased again to around 70,000 t in recent years. In 2009, landings are estimated to have been 61,391 tonnes, predominantly taken by Iceland. Of the landings 46,407 tonnes were caught by trawl, 9,365 tonnes caught by gillnets, and 5, 619 tonnes caught by other means.

SOURCE OF MANAGEMENT ADVICE: A separable, forward projection, statistical catch-age model is used to fit the catch at age data from the commercial fleets (ages 3–14, years 1980–2009) and using the Spring bottom-trawl survey index (ages 3–10, year 1985–2010) as a tuning series. Commercial cpue from the most important fleets targeting saithe are available for 20 years or more. Although these indices have been explored for inclusion in the past, they were not considered for calibrating the assessment as they are not considered to be a reliable indicator of abundance. The Icelandic discards monitoring program has not detected large amount of discards in the saithe fishery. Not including discards in the assessment is thus not considered to cause a significant bias in the assessment and the advice. The assessment is relatively uncertain due to high variances in survey measurements and due to lack of reliable recruit estimates. Increased proportion of gillnets landing in most recent years might violate the assumption of selection patterns assumed.

REFERENCE POINTS:

Type	*Value*	*Technical basis*

MSY Approach	MSY $B_{trigger}$	80KT	Stochastic projections based on hockeystick SSB/R function
	F_{msy}	0.28	Stochastic projections based on hockeystick SSB/R function
Precautionary Approach	B_{lim}	65Kt.	B_{loss} estimate in 2010
	B_{pa}	Not defined	
	F_{lim}	Not defined	
	F_{pa}	Not defined	

STOCK STATUS:

	F (Fishing Mortality)		
	2007	**2008**	**2009**
MSY (F_{msy})	⊖	⊖	⊖
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	⊕	⊕	⊕
Precautionary approach (B_{pa},B_{lim})	⊕	⊕	⊕

The fishing mortality has increased significantly in the last 5 years and is currently at the historic high. SSB has been declining since 2002 and is at present below the long term average. Recruitment in recent years has been around the long-term average.

MANAGEMENT AGREEMENTS: No specific management objectives are known to ICES.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Catch in 2011**
MSY approach	40 000 t
Transition to an **MSY approach** with caution at low stock size	
Cautiously avoid impaired recruitment (**Precautionary Approach**)	
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	

MSY approach
Following the ICES MSY framework implies fishing mortality to be reduced to 0.28, resulting in landings of 40 000 t in 2011. This is expected to lead to an SSB of 100 000 t in 2012.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Icelandic Saithe in Division Va falls under Category 2. Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 40,000 t which corresponds to F_{msy} (0.28).

8.6. Greenland halibut (*Reinhartius hippoglossoides*) in Sub-areas V, VII, XII and XIV

FISHERIES: Most of the fishery for Greenland halibut in Divisions Va, Vb and XIVb is a directed fishery. During the period 1982–1986, landings were stable at about 31,000–34,000 t. In the years 1987–1989, landings increased to about 62,000 t. This was followed by a decline to around 20,000 t in 1999. In the recent period 2000 to 2009, landings were in the range 21,000 to 30,000 t. Landings in Icelandic waters have historically

predominated the total landings in areas V+XIV, but since the mid 1990s also fisheries in XIV and Vb have developed. A smaller part of the landings and fishery relates to the Greenland EEZ part of XIVb as well as international waters on the Reykjanes Ridge.

In 2009 quotas in Greenland EEZ were utilised by most of the principal fleets. Within the Iceland EEZ, quotas in the fishing year 2008/2009 were fully utilized as in the preceding fishing years. In the Faroe EEZ the fishery is regulated by a fixed numbers of licenses and technical measures like by-catch regulations for the trawlers and depth and gear restrictions for the gillnetters. Most of the fishery for Greenland halibut in Divisions Va, Vb and XIVb is a directed trawl fishery, and only minor catches in Va by Iceland, and in XIVb by Germany and the UK comes partly from a redfish fishery.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The data are insufficient for an analytical assessment. A probabilistic (Bayesian) version of a surplus-production model was used to assess the stock. Biomass is expressed on a scale relative to B_{msy} and F relative to F_{msy}. The assessment uses biomass indices from a standardized cpue series of the Icelandic trawl fleet (1985–2009) and two trawl surveys (Va: 1996–2009, XIV: 1998–2009). Discards are not included in the assessment.

REFERENCE POINTS: Presently, there are no defined reference points.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	**2008**	**2009**
MSY (F_{msy})	⛔	⛔	⛔
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	⛔	⛔	⛔
Precautionary approach (B_{pa},B_{lim})	?	?	?

The assessment is considered indicative of stock trends, and provides relative measures of stock status. The stock has been below B_{msy} since the early-1990s and is presently at a historical low at 40% of B_{msy}. Present fishing mortality is estimated at between three to four times the fishing mortality associated with maximum sustainable yield.

MANAGEMENT AGREEMENTS: There is no regional management agreement in place. ICES recommends that an adaptive management plan covering the entire stock area be developed and implemented.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Catch in 2011**
MSY	Less than 5000 t
Transition to an **MSY approach** with caution at low stock size	
Cautiously avoid impaired recruitment (**Precautionary Approach**)	
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	

MSY approach

Following the ICES MSY framework implies fishing mortality to be reduced substantially and landings of less than 5000 t in 2011. Catches at that level would lead to a fishing mortality that well below F_{msy}, This reduction in catches could be part of an adaptive management plan for the entire stock area.

Other considerations:

Previously, catches at or exceeding the present level (28 000t) have resulted in a rapid decline of the stock biomass. The high catches of the late 1980s and the increase in the early 2000s have particularly contributed to the decline of the stock. Greenland halibut is a slow-growing and long-lived species and rebuilding the stock to previous levels is therefore only likely achieved within a long time frame. The medium-term forecasts suggest that stock recovery is slow under all fishing scenarios, even in the case of no fishery. Therefore ICES recommends a reduction of the present high fishing mortality (3–4 times F_{msy}) to well below F_{msy}, in order to achieve a more rapid stock recovery. Catch reductions to no more than 5 kt are required to ensure that fishing mortality is kept well below F_{msy}. The management plan should include monitoring of the effort and stock development as well as a framework for adapting future fishing according to the response of the stock. Since Greenland halibut is a highly vulnerable species, it is expected that a change in stock dynamics may take several years and this should be taken into consideration in the adaptive management plan.

Distribution of total fishing effort for Greenland halibut indicates that the recent fishery is concentrated in a much smaller area compared to the overall fishery in the period 1991–2009 for the species.

Available biological information such as tagging and genetic studies and the distribution of the fisheries suggest that Greenland halibut in Divisions XIV and V belong to the same stock entity.

Because the nursery grounds are not known, there is no monitoring of recruits and juveniles. Because Greenland halibut is a slow-growing species that first appears in catches at age 4-6, recruitment failure will only be detected in the fishery some 5–10 years after it occurs.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice for 2011

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Greenland Halibut in Divisions V, VII, XII and XIV falls under Category 6.Accordingly STECF notes that the rules for the above category imply a TAC in 2011 of 20,400 t (Annex IV Rule 1). This figure is calculated on the basis of a 15 % reduction in the 2010 TAC.

8.7. Redfish (*Sebastes marinus*) in Sub-areas V, VI, XII and XIV

FISHERIES: *S. marinus* are mainly taken by bottom otter trawlers in depths down to 500 m. Icelandic trawlers account for the majority of the catches from Division Va, while Faroese trawlers take most of the catches from Division Vb. In Sub-area XIV, the catches are mainly a by-catch in shrimp fisheries. In order to reduce the catches of *S. marinus* in Division Va, an area closure was imposed in 1994 and the quotas have been reduced in recent years.

The total catch of *S. marinus* in Divisions Va and Vb and in the Sub-areas VI and XIV has decreased from about 130,000 t in 1982 to about 40,000 t during the mid-1990s. Since then, the annual catches varied without a clear trend between 40,000 - 50,000 t. In recent years, around 98% of total catches were taken in Division Va.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Last year this stock was assessed with the Gadget model (length and age based) but is now the assessment is based on survey trends. The Gadget model did not capture recruitment signals and settings of the model need to be formalized. Survey data are available from the Icelandic spring groundfish survey 1985–2010, the German groundfish survey 1985–2009 in Subarea XIV, and the Faroese spring (1994–2010) and summer (1996–2009) surveys in Division Vb. Data from the commercial catch in Division Va include length distribution, age–length key, and mean length-at-age. The relative state of the stock is assessed through a survey index series (U) in Icelandic waters.

REFERENCE POINTS:

	Type	Value	Technical basis

Precautionary approach	U_{lim}	55	20% of highest observed survey index*.
	U_{pa}	155	60% of highest observed survey index*.
	F_{lim}	Undefined	
	F_{pa}	Undefined	
Targets	U_y	Undefined	

(unchanged since 1998)
**Technical basis for the survey index*

The basis for the calculation of the U_{pa} is the Icelandic spring groundfish survey index series starting in 1985. Since 1990 the average U has been around half of U_{max} – the highest observed index in the time-series (276 in 1987). This has not resulted in any strong year classes compared to higher U's. A precautionary U_{pa} is therefore proposed at U_{max}*0.6, corresponding to the U's associated with the most recent strong year class. U is regarded as a proxy for SSB but represents the fishable biomass.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	**2008**	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	o	o	+

In recent years the survey index in Icelandic waters has fluctuated around U_{pa} and, at present, in the vicinity of U_{pa}. Recruitment in Division Va is estimated to be low in recent years (March survey). Survey indices of both pre-fishery recruits and of fishable size in Division XIVb (East Greenland) have increased in recent years. In Division Vb the Faroese groundfish survey (covering 1994–2009) indicates that the abundance has been stable at a low level since 2001. Landings have declined since 1985 to a low level in recent years, and this decline is also reflected in the Faroese summer survey.

MANAGEMENT AGREEMENTS: The present management scheme in Division Va sets a joint TAC for *S. marinus* and demersal *S. mentella* on the shelf. This impedes direct management of fisheries on *S. marinus*. TAC or effort allocated to demersal redfish fishery should be given separately for each of the redfish species.

Subarea XIV is an important nursery area for *S. mentella* and *S. marinus*. The survey index of the fishable stock of *S. marinus* in Subarea XIV has increased in recent years, but with a large measurement error. Measures to protect juvenile redfish in Subarea XIV should be continued (sorting grids in the shrimp fishery).

No formal agreement on the management of *S. marinus* exists among the three coastal states, Greenland, Iceland, and the Faroe Islands. In Greenland and Iceland, the fishery is regulated by a TAC and in the Faroe Islands by effort limitation.

RECENT MANAGEMENT ADVICE: The new data (landings and surveys) do not change the perception of the stock and give no reason to change the advice from that given last year: *"Catches in 2010 should be less than 30 000 t, because this is expected to keep the stock above U_{pa} in the medium term."*
The relative state of the stock is assessed through a survey index series (U) in Icelandic waters.

STECF COMMENTS:

STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Redfish (*Sebastes marinus*) in Division V, VI, XII and XIV falls under Category 6 (Annex IV, Rule 4). Accordingly STECF notes that the rules for the above category imply unchanged TAC from 2010. STECF notes that this TAC is for *S. marinus* and *S. mentella* combined and therefore cannot be calculated individually.

8.8. Redfish (*Sebastes mentella*) on the continental shelf of Iceland (demersal in Division Va and Sub-area XIV)

The stock structure of redfish *S. mentella* in Subareas V, VI, XII and XIV, and in the NAFO Convention Area has been evaluated by ICES early 2009. The outcome is that demersal *S. mentella* in Icelandic waters ("Icelandic slope" stock in ICES Divisions Va and XIV) is to be treated as one biological stock, separated from the demersal *S. mentella* found on the continental slopes of Greenland (Division XIV) and the Faroe Islands (Vb). Regarding the latter component there is not sufficient information to allow an assessment for advice

FISHERIES: In Division Va, demersal S. *mentella* are taken mainly by Icelandic trawlers at depths greater than 500 m. The total annual catches almost doubled in the early 1990s, but have since then decreased to the level of the 1980s. The increase was mainly caused by an increased catch in Division Va. The increased catch of *S. marinus* in Va in 2002 and decreased catch of *S. mentella* in 2001 and 2002 is due to a joint quota for *S. marinus* and *S. mentella* on the shelf, and the fishing fleet has increased the proportion taken from *S. marinus* in most recent years. Since 2004, total annual catches varied between 18,000 and 25,000 t. Total landings of demersal *S. mentella* in Icelandic waters in 2009 were about 18 700 t, about 7 000 t less than in 2008.The catch figures of demersal *S. mentalla* do include catches taken by pelagic gears close to the bottom and east of a management line in the Icelandic EEZ, which by definition separates Icelandic demersal from pelagic catches of *S. mentella*.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Survey data are available from the Icelandic fall groundfish survey in Division Va (2000–2009). Cpue data are available from Icelandic trawlers in Division Va (1986–2009) but were not considered representative of stock trends. There are no explicit management objectives for this stock.

REFERENCE POINTS: No precautionary reference points are established.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	**2008**	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

In the absence of reference points, the state of the stock cannot be fully evaluated. Available survey biomass estimates indicate that in Division Va the biomass has been low but stable in the last years.

MANAGEMENT AGREEMENTS: There are no explicit management agreements for Icelandic slope *S. mentella*. Icelandic authorities give a joint quota for golden redfish *(S. marinus)* and Icelandic slope *S. mentella* in Icelandic waters. Both species are therefore treated as redfish by the Icelandic authorities. Redfish is managed under ITQ system.

RECENT MANAGEMENT ADVICE:

The 2009 data (landings and survey) do not change the perception of the stock and give no reason to change the advice from that given last year: *"ICES advises that a management plan be developed and implemented which takes into account the uncertainties in science and the properties of the fisheries. ICES suggests that catches are set no higher than 10 000 t as a starting point for the adaptive part of the management plan."*

MSY approach
Future work on developing a management plan is required, to encompass the MSY framework.

PA approach
ICES suggests that catches are set no higher than 10 000 t as a starting point for the adaptive part of the management plan.

Other considerations:

ICES suggests that catches of S. mentella are set at 10 000 t as a starting point for the adaptive part of the management plan. ICES has previously advised that most deep-water species like redfish can only sustain low rates of exploitation, since slow-growing, long-lived species that are depleted have a long recovery period. Fisheries should only be allowed to expand when indicators have been identified and a management strategy including appropriate monitoring requirements has been decided and is implemented.

A catch of 10 000 t would be a significant reduction in catches compared with the recent past. This is expected to result in a lower exploitation rate, but the absolute magnitude of this reduction cannot be estimated at this time.

Measures to protect juvenile redfish in Subarea XIV should be continued (sorting grids in the shrimp fishery).

ICES advises that separate TACs for *S. marinus* and *S. mentella* be set in Division Va.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Redfish (*Sebastes mentella*) in Division Va and Sub-area XIV falls under Category 6 (Annex IV, Rule 4). Accordingly STECF notes that the rules for the above category imply unchanged TAC from 2010. STECF notes that this TAC is for *S. marinus* and *S. mentella* combined and therefore cannot be calculated separately.

8.9. Pelagic redfish (Sebastes mentella) in ICES areas Va, XII and XIV and NAFO Sub-areas 1-2

The "Workshop on Redfish Stock Structure" (WKREDS, 22–23 January 2009, Copenhagen, Denmark; ICES 2009) reviewed the stock structure of *Sebastes mentella* in the Irminger Sea and adjacent waters. ACOM concluded, based on the outcome of the WKREDS meeting, that there are three biological stocks of *S. mentella*:

- a 'Deep Pelagic' stock (NAFO 1–2, ICES V, XII, XIV >500 m) – primarily pelagic habitats, and includes demersal habitats west of the Faroe Islands;
- a 'Shallow Pelagic' stock (NAFO 1–2, ICES V, XII, XIV <500 m) – extends to ICES I and II, but primarily pelagic habitats, and includes demersal habitats east of the Faroe Islands;
- an 'Icelandic Slope' stock (ICES Va, XIV) – primarily demersal habitats.

8.10. Beaked Redfish (Sebastes mentella) in Subareas V, XII, XIV and NAFO Subareas 1+2 (Deep Pelagic stock > 500 m)

FISHERIES: The fishery started around 1991–1992 when the commercial fleet of the shallow pelagic redfish moved into deeper waters. Since 1997, the main fishing season occurred from late April to August in the so-called northwest fishing area near the Greenland and Icelandic EEZ and within the Icelandic EEZ, i.e. in the

area east of 32°W and north of 61°N. The trawlers participating in this fishery use large pelagic trawls (*Gloria*-type) with vertical openings of 80–150 m. The vessels have operated at a depth range of 600 to 950 m in 1998–2008. Discarding is at present not considered to be significant in this fishery. The deep pelagic fishery in the Irminger Sea only exploits the mature part of the stock. Nursery areas for the stock are found at the continental slope off East Greenland. Technical conservation measures such as mandatory sorting grids in the shrimp fishery that have been in place for several years should be continued in order to protect the juvenile redfish.
Landings of the deep pelagic *S. mentella* stock have declined from 139,000t in 1996 to 30,000 t in 2008. In 2009, this fishery was subject to a NEAFC TAC of 46,000 t, which was given for both shallow and deep stocks.

SOURCE OF MANAGEMENT ADVICE: Scientific advice is provided by ICES. The main management organisation concerned with pelagic redfish in the Irminger Sea is NEAFC. Survey indices, catches, CPUE and biological data are available for the stock, but the assessment is mainly based on surveys. The quality of the trawl biomass estimate from the international trawl-acoustic surveys since 1999 cannot be verified as the data series is relatively short and the survey is only conducted every second year. Therefore, the abundance estimates by the trawl-method must only be considered as a rough attempt to measure the abundance of the deep pelagic stock. It is not known to what extent CPUE reflect changes in the stock status of deep pelagic *S. mentella* stock. The fishery targets pelagic aggregating fish. Therefore, stable or increasing CPUEs are not considered to reflect the stock status reliably, but decreasing CPUEs likely indicate a decreasing stock.

MANAGEMENT AGREEMENT: There are no explicit management objectives for this stock.

REFERENCE POINTS: Precautionary reference points are not defined for this stock.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	**2008**	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

Based on the trawl survey estimates, there is indication of a decreasing trend in the time series and the 2009 estimate is the lowest in the series. Catch-per-unit-effort (CPUE) has been variable over the years, but on average the recent CPUEs are lower than in the early part of the time series. These indices in combination with a marked decrease in landings since 2004 suggest that the stock has been reduced substantially in the past decade. The exploitation rate for this stock is unknown.

RECENT MANAGEMENT ADVICE:

The 2009 landing and logbook data do not change the perception of the stock. The advice for the fishery in 2011 is therefore the same as the advice given in 2009 for the 2010 fishery: *"ICES advises on the basis of precautionary considerations that the fishery be reduced below the 2008 level to 20 000 t and that a management plan be developed and implemented. ICES suggests that catches of Deep Pelagic S. mentella are set at 20 000 t as a starting point for the adaptive part of the management plan. Given the reduced abundance of this stock in recent years, a total catch limit of no greater than 20 000 tonnes should be implemented in 2010, irrespective of whether a management plan has been developed by that time or not.."*
This advice will be updated in the fall of 2011 on the basis of new survey information.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that the deep pelagic stock of *Sebastes mentella* in ICES areas Va, XII and XIV and NAFO Sub-areas 1-2 falls under Category 10. Accordingly STECF notes that the rules for the above category imply a TAC reduction of 25% in 2011. STECF notes that this TAC for shallow and deep water *S. mentella* is combined and therefore cannot be calculated separately.

8.11. Beaked Redfish (Sebastes mentella) in Subareas V, XII, XIV and NAFO Subareas 1+2 (Shallow Pelagic stock < 500 m)

FISHERIES: Russian trawlers started fishing on the shallow pelagic *S. mentella* stock in 1982 and covered wide areas of the Irminger Sea. Vessels from other nations soon joined this fishery. The main fishing area in the last decade has been south and southeast of Cape Farwell, Greenland, the so-called southwestern area (south of 60°N and west of about 32°W), and the area is almost entirely shallower than 500 m. Since 2000, the southwestern fishing ground extended also into the NAFO Convention Area, but in later years the fishing area has been limited to the border area between NAFO and ICES south of Greenland. Catches have in parallel with this shrinkage declined substantially. In the period 1982–1992, the fishery was carried out mainly from April to August but since then the fishery has been conducted from July-October. The trawlers participating in this fishery use large pelagic trawls (*Gloria*-type) with vertical openings of 80–150 m.
The shallow pelagic stock fishery in the Irminger Sea only exploits the mature part of the stock. Nursery areas for the stock are found at the continental slope off East Greenland. Technical conservation measures such as mandatory sorting grids in the shrimp fishery that have been in place for several years should be continued in order to protect the juvenile redfish.
Landings of the shallow pelagic *S. mentella* stock has declined from 100,000t in 1993 to 2,000 t in 2008. In 2009, this fishery was subject to a NEAFC TAC of 46,000 t, which was given for both shallow and deep stocks.

SOURCE OF MANAGEMENT ADVICE: Scientific advice is provided by ICES. The main management organisation concerned with pelagic redfish in the Irminger Sea is NEAFC.
Survey indices, catches, CPUE and biological data are available for the stock, but the assessment is mainly based on surveys. ICES again had difficulties in obtaining landings data from some ICES' member countries. In spite of best efforts, there is a need for a special action through NEAFC and NAFO to provide ICES in time with all information that might lead to more reliable catch statistics. *Furthermore, ICES recommends that all nations should report depth information in accordance with the NEAFC logbook format*.

MANAGEMENT AGREEMENT: There are no explicit management objectives for this stock.

REFERENCE POINTS: Precautionary reference points are not defined for this stock.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	**2008**	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	?	?	?

Stock size is probably low; the estimate from the acoustic survey in 2009 is less than 5% of the estimates at the beginning of the survey time series in the early 1990s. The exploitation rate for this stock is unknown.

The lack of accurate fisheries and survey data (especially for depths within the deep-scattering layer) and recruitment indices prevents precise determination of stock status. ICES is concerned about the lack of agreed

management and TAC allocation schemes. This increases the risk of over-exploitation. The autonomous quotas that have been set are insufficient to constrain catches.

RECENT MANAGEMENT ADVICE: The new landing and logbook data do not change the perception of the stock. The advice for the fishery in 2011 is therefore the same as the advice given in 2009 for the 2010 fishery: "*ICES advises on the basis of precautionary considerations that no directed fishery should be conducted and by-catch of this stock in non-directed fisheries should be kept as low as possible.* A recovery plan should be developed. *Given the very low state of the stock, the directed fishery should be closed in 2010 irrespective of whether the recovery plan has been developed by that time or not."* This advice will be updated in the fall of 2011 on the basis of new survey information.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that the shallow pelagic stock of *Sebastes mentella* in Division V, XII, XIV and NAFO Subareas 1+2 falls under Category 10. Accordingly STECF notes that the rules for the above category imply a TAC reduction of 25% in 2011. STECF notes that this TAC for shallow and deep water *S. mentella* is combined and therefore cannot be calculated separately.

8.12. Icelandic summer-spawning herring (*Clupea harengus,* Division Va)

STECF notes that the advice for Icelandic summer-spawning herring (*Clupea harengus*) in ICES subareas I-IX, XII & XIV for 2011 will be subject to change pending the addition of new data from surveys undertaken in the autumn of 2010. Any such change in the advice will be incorporated in the Consolidated STECF review of advice for 2011, which will be published in November 2010.

8.13. Capelin (*Mallotus villosus*) in Subareas V and XIV and Division IIa west of 5°W (Iceland-East Greenland-Jan Mayen area)

FISHERIES: In the mid-1960s, purse seine fishery began on capelin. It soon became a large-scale fishery. During its first 8 years, the fishery was conducted in February and March on schools of pre-spawning fish on or close to the spawning grounds south and west of Iceland. In January 1973, a successful capelin fishery began in deep waters near the shelf break east of Iceland. In July 1976, a summer capelin fishery began in the Iceland Sea. This fishery became multinational with vessels from Iceland, Norway, the Faroes and Denmark. The fishery is conducted in all years in July-March except in periods of low stock size. Over the years, the fishery has been closed during April-late June and the season has started in late June/August or later, depending on the state of the stock. In recent years, the fishery for capelin has changed from being mostly an industrial fishery to being mostly for human consumption. This is largely because of the low abundance and low TACs.

SOURCE OF MANAGEMENT ADVICE: The basis for stock assessment and short-term forecasts are acoustic surveys and catch-at-age information. In the period 1 November 2009 until 18 February 2010, 5 acoustic surveys were conducted to assess the capelin stock. Scouting vessels participated also in the search of capelin in January/February. During February a few more attempts were made to assess the spawning migration. The practice of a variable searching time depending on the initial acoustic estimates may result in a biased assessment of stock size.

REFERENCE POINTS: No reference points have been proposed by ICES for this stock.

STOCK STATUS: In the absence of defined reference points, the state of the stock cannot be evaluated. The TAC should be set so that an SSB of at least 400 000 t is left to spawn in March 2011. The 2008 year class was estimated acoustically as the third lowest age-1 abundance estimate in the time series and not sufficient for a fishery in 2010/11.

MANAGEMENT AGREEMENTS:

The fishery is managed according to a two-step management plan which requires a minimum spawning-stock biomass of 400 000 t by the end of the fishing season. The first step in this plan is to set a preliminary TAC based on the results of an acoustic survey carried out to evaluate the immature (age 1 and most of age 2) part of the capelin stock about a year before it enters the fishable stock. The initial quota is set at 2/3 of the preliminary TAC, calculated on the condition that 400 000 t of the SSB should be left for spawning. The second step is based on the results of another survey conducted during the fishing season for the same year classes. This result is used to revise the TAC, still based on the condition that 400 000 t of the SSB should be left for spawning. ICES has not evaluated the management plan with respect to the precautionary approach.

RECENT MANAGEMENT ADVICE:

Management Objective (s)	**Catch in 2011**
MSY	
Transition to an **MSY approach** with caution at low stock size	
Cautiously avoid impaired recruitment (**Precautionary Approach**)	No fishery
Cautiously avoid impaired recruitment and achieve other objective(s) of a **management plan** (e.g., catch stability)	

There should be no fishery until new information on stock size becomes available after the planned survey in November 2010. The TAC should be set so that at least 400 000 t is left to spawn in March 2011. The 2008 year class was estimated acoustically as the third lowest age-1 abundance estimate in the time series and not sufficient for a fishery in 2010/11.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Capelin in in Subareas V and XIV and Division IIa falls under Category 5.The stock is short-lived and a one year forecast cannot be provided. A provisional TAC of 0 is set and will be changed when new information is available during the year.

9. Resources in the Barents and Norwegian Seas

9.1. Northern Shrimp (*Pandalus borealis*) in Sub-areas I (Barents Sea) and & IIb (Svalbard Waters)

The stock summary and advice for Northern shrimp (*Pandalus borealis*) in Sub-areas I (Barents Sea) and & IIb (Svalbard Waters) will be updated in October 2010 and included in the consolidated STECF review of advice for stocks of Community interest for 2011. The most recent STECF advice on this stock is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

9.2. Cod (*Gadus morhua*) in area I and II (North East Arctic cod)

FISHERIES: Northeast arctic cod is exploited predominantly by Norway and Russia with smaller landings by countries including the UK, the Faroe Islands, Spain and Germany. The fishery for North east Arctic cod is conducted both by an international trawler fleet operating in offshore waters and by vessels using gillnets, long-lines, hand-lines and Danish seine operating both offshore and in the coastal areas.

From a level of about 900,000 t in the mid-1970s, landings declined steadily to around 300,000 t in 1983-1985. Landings increased to above 500,000 t in 1987 before dropping to 212,000 t in 1990, the lowest level recorded in the post-war period. The catches increased rapidly from 1991 onwards, stabilised around 750,000 t in 1994-1997 but decreased to about 414,000 t in 2000. The catches in 2004 and 2005 are estimated to be to 606,000 t and

641,000 t. In 2006, the catch was estimated to 538,000 t, 487,000 t in 2007 and 464,000 t in 2008. The total catch in 2009 was 523,000 t (72% trawls and 28% other gears)

Under-reporting of landings has been an important issue for this stock in recent years. Two sets of estimates of non-reported landings (IUU) for the period 2002–2007 were available, ranging from 41,000–166,000 t and 9,000–41,000 t in recent years. ICES does not have a basis on which to choose one estimate over the other. The series with 41,000–166,000 t unallocated landings was taken forward in the calculations because this is the same method as the one used last year. The choice of the time-series of unreported landings does not affect the advice according to the agreed HCR. The estimates of unreported landings have been reduced considerably from 2006 to 2008. For 2009, the estimate of unreported landings is close to zero.

The TAC for 2009 was set above the catch corresponding to the agreed management plan. The earlier testing of the agreed management plan presumed that the plan should be strictly followed for setting TAC, and the deviation from the management plan in last year is not considered to be a precautionary practice. ICES considers that application of the agreed management plan in 2011 has long-term benefits above the application of F_{pa}.

Unreported landings will reduce the effect of management measures and will undermine the intended objectives of the harvest control rule. It is therefore important that management agencies ensure that all catches are counted against the TAC.

Discarding is illegal in Norway and Russia. Data on discarding are scarce, but attempts to obtain better quantification continue. The fisheries are controlled by inspections of the trawler fleet at sea, i.e. by a requirement to report to catch control points when entering and leaving the EEZs, VMS satellite tracking for some fleets, and by random inspections of fishing vessels when landing the fish. Keeping a detailed fishing logbook on-board is mandatory for most vessels, and large parts of the fleet report to the authorities on a daily basis.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on analysis of catch-at-age data, using one commercial CPUE series and three survey series. Estimates of cannibalism are included in the natural mortality. The total effect of the discarding and IUU fishing is still unclear and requires more work before it can be included in the assessments.

REFERENCE POINTS:

	Type	***Value***	***Technical basis***
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	Not defined	
Precautionary Approach	B_{lim}	220 kt	change point regression
	B_{pa}	460 kt	the lowest SSB estimate having >90% probability of remaining above B_{lim}
	F_{lim}	0.74	F corresponding to an equilibrium stock = B_{lim}
	F_{pa}	0.40	the highest F estimate having >90% probability of remaining below F_{lim}

MANAGEMENT AGREEMENTS: This stock is currently managed by a joint Norwegian and Russian scientific advisory body. The fisheries are regulated according to bilateral agreements between Russia and Norway.

At the 33rd meeting of the Joint Russian-Norwegian Fisheries Commission (JRNC) in November 2004, the following decision was made:

"The Parties agreed that the management strategies for cod and haddock should take into account the following:
- conditions for high long-term yield from the stocks
- achievement of year-to-year stability in TACs
- *full utilization of all available information on stock development*
-

On this basis, the Parties determined the following decision rules for setting the annual fishing quota (TAC) for Northeast Arctic cod (NEA cod):

- estimate the average TAC level for the coming 3 years based on F_{pa}. TAC for the next year will be set to this level as a starting value for the 3-year period.

- the year after, the TAC calculation for the next 3 years is repeated based on the updated information about the stock development, however the TAC should not be changed by more than +/- 10% compared with the previous year's TAC.
- if the spawning stock falls below B_{pa}, the procedure for establishing TAC should be based on a fishing mortality that is linearly reduced from F_{pa} at B_{pa}, to F= 0 at SSB equal to zero. At SSB-levels below B_{pa} in any of the operational years (current year, a year before and 3 years of prediction) there should be no limitations on the year-to-year variations in TAC.
- The Parties agreed on similar decision rules for haddock, based on F_{pa} and B_{pa} for haddock, and with a fluctuation in TAC from year to year of no more than +/-25% (due to larger stock fluctuations).[1]"

The plan aims to maintain F at F_{pa} = 0.40 and restrict between-year TAC change to ±10% unless SSB falls below B_{pa}, in which case the target F should be reduced.

Based on evaluations made in 2006 and 2007, ICES considers the management plan to be in accordance with the precautionary approach. If conditions change to outside the assumed range (with respect to biological conditions, assessment quality, or implementation error), the management plan may have to be revised.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	+	+	+

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	+	+	+

The SSB has been above B_{pa} since 2002 and is now near its record high. Fishing mortality was reduced from well above F_{lim} in 1999 to below F_{pa} in 2007 and is now close to its lowest value. Surveys indicate that cod recruitment will be below the average in 2010-2012.

RECENT MANAGEMENT ADVICE:

MSY approach

For NEA cod stochastic simulations show that F_{msy} is in the range 0.25-0.60, where the yield curve is fairly flat, the exact shape is dependent on the biological model used. This range is higher than the range obtained from the yield per recruit analysis. Work is in progress to evaluate the current management plan in relation to the MSY framework.

PA approach

The fishing mortality in 2011 should be no more than F_{pa} corresponding to landings of 896 kt. This is expected to keep SSB above B_{pa} in 2012.

Management plan

In accordance with the adopted management plan fishing mortality in 2011 should be no more than F=0.30 corresponding to landings of 703 kt. This is expected to keep SSB above B_{pa} in 2012.

[1] This quotation is taken from point 5.1, in the Protocol of the 33rd session of The Joint Norwegian-Russian Fishery Commission and translated from Norwegian to English. For an accurate interpretation, please consult the text in the official languages of the Commission (Norwegian and Russian).

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that cod (*Gadus morhua*) in area I and II (North East Arctic cod) falls under Category 4. STECF notes that in accordance with the joint Russian-Norwegian management plan, landings in 2011 should be 703,000 t.

9.3. Cod (*Gadus morhua*) in area I and II (Norwegian coastal cod)

FISHERIES: In addition to TACs, the fishery is regulated by the same minimum catch size, minimum mesh size on the fishing gears as for the Northeast Arctic cod, maximum by-catch of undersized fish, closure of areas having high densities of juveniles, and by seasonal and area restrictions.

Trawl fishing for cod is not allowed inside the 6-nautical mile line except for about 10 fresh fish trawlers which in a few areas have a dispensation to fish between the 4 and 6-mile line in the period 15. April – 15. September.

Since the mid-1990s the fjords in Finnmark and northern Troms (areas 03 and 04) have been closed for fishing with Danish seine. Since 2000 the large longliners have been restricted to fish outside the 4-nautical mile line. To achieve a reduction in landings of coastal cod additional technical regulations in coastal areas were introduced in May 2004 (after the main fishing season) and continued with small modifications in 2005 and 2006. In the new regulations "fjord-lines" are drawn along the coast to close the fjords for direct cod fishing with vessels larger than 15 meter. A box closed for all fishing gears except hand-line and fishing rod is defined in the Henningsvær–Svolvær area. This is an area where spawning concentrations of coastal cod is usually observed and where the catches of coastal cod has been high. Since the coastal cod is fished under a merged coastal cod/northeast Arctic cod quota, these regulations are aimed at moving parts of the traditional coastal fishery from the catching of coastal cod in the fjords to a cod fishery outside the fjords, where the proportion of northeast Arctic cod is higher. Further restrictions were introduced in 2007 by not allowing pelagic gillnet fishing for cod and by reducing the allowed by-catch of cod when fishing for other species inside fjord lines from 25% to 5%, and outside fjord lines from 25% to 20%. The regulations were maintained in 2008. In addition, in 2009 one more spawning area was closed for fishery (except for hand line and fishing rod) in the spawning season: this is Borgundfjorden near Ålesund, which is the most important spawning area in the soutehern part of the stock distribution area.

The 2008 landings were estimated to be 26 000 t, i.e. above the 2008 TAC of 21 000 t. The regulations have not been sufficient to cause large reductions in catches, and current catches are still too high. Landings in 2009 were about 25,000 t, 4,000 t higher than the agreed TAC.

Norwegian coastal cod is managed as part of the Norwegian Northeast Arctic cod fishery. From the mid-1970s to 2003 an expected yield of 40 000 t from the coastal cod was added annually to the quota for Northeast Arctic cod. In 2004 and later years the additional catch expected from this stock has been set near 20 000 t.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Surba and XSA analyses are used to give broad trends, and it is based on catch-at-age data and on an acoustic survey. The assessment is considered indicative of stock trends and does not reflect absolute stock sizes. This does not invalidate the overall conclusions.

REFERENCE POINTS: Precautionary references points have not been established for this stock.

MANAGEMENT AGREEMENTS: There are no stated management objectives for this stock and no known management agreements. A rebuilding plan has been proposed by the Norwegian authorities and is in the process of being evaluated by ICES.

STOCK STATUS: In the absence of defined precautionary reference points the state of the stock cannot be fully evaluated. The survey indicates that the SSB is close to the lowest observed level. Recruitment has declined over the period 1984–2002 and has remained low since. Recruitment is clearly impaired at present SSB.

RECENT MANAGEMENT ADVICE:

The 2009 data do not change the perception of the stock and give no reason to change the advice from that given last year: ***"Given the low SSB and recruitment for this stock, no catch should be taken from this stock in 2011 and a recovery plan should be developed and implemented."***

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Cod (*Gadus morhua*) in area I and II (Norwegian coastal cod) falls under Category 10. Accordingly STECF notes that the rules for the above category imply that the TAC for 2011 should be reduced by at least 25% compared to 2010 which implies that landings in 2011 should be no greater than 15,750 t. Furthermore the rules for category 10 also stipulate that recovery measures should be implemented including effort reductions and introduction of more selective fishing gear.

9.4. Haddock (*Melanogrammus aeglefinus*) in subareas I and II (Northeast Arctic haddock)

FISHERIES: Haddock is mainly fished by trawl as by-catch in the fishery for cod. Part of the catches are taken by other conventional gears, mostly longline. TAC regulations are in place but there was non-compliance, resulting in a significant amount of unreported landings in the past. However, IUU (Illegal, Unreported and Unregulated) catches have decreased in the last years and were close to zero in 2009. The fishery is also regulated by a minimum catching size, a minimum mesh size in trawls and Danish seine, a maximum by-catch of undersized fish, closure of areas with high density of juveniles, and other area and seasonal restrictions. Since January 1997, sorting grids have been mandatory for the trawl fisheries in most of the Barents Sea and Svalbard area. Discarding is illegal in Norway and Russia. Data on discarding are scarce, but attempts to obtain better quantification continue. The fisheries are controlled by inspections of the trawler fleet at sea, i.e. by a requirement to report to catch control points when entering and leaving the EEZs, VMS satellite tracking for some fleets, and by random inspections of fishing vessels when landing the fish. Keeping a detailed fishing logbook on-board is mandatory for most vessels, and large parts of the fleet report to the authorities on a daily basis.

In recent years Norway and Russia have accounted for more than 70% of the landings. The total landings in 2007 and 2008 were estimated to be 161,000 t and 156,000 t respectively. In 2009 the total catch was 200,000 t (78% trawl, 15% longline and 7 % other gears).

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. Analytical assessment based on catch-at-age data, using three survey series. Estimates of cod predation on young haddock are included in the natural mortality. Two series of IUU catch were made available to ICES, but the advice is based on one series only. The surveys in 2006 had incomplete coverage, but the index calculation has been adjusted accordingly (ICES. 2008. Report of the Arctic Fisheries Working Group, 21–29 April 2008. ICES CM 2008/ACOM:01).

MANAGEMENT AGREEMENTS: A management plan has been in force since 2004 with the objectives of maintaining high long-term yield, year-to-year stability, and full utilization of all available information on stock dynamics. The plan aims to maintain F at F_{pa} = 0.35 and minimize between-year TAC change to +/− 25%, unless SSB falls below B_{pa} in which case the management targets should change.

At the 36th Session of the Joint Russian–Norwegian Fishery Commission (JRNFC) in autumn 2007 the parties agreed to modify the former three-year rule to a one-year rule in accordance with the results of ICES HCR evaluation.

The agreed HCR for haddock (2007) is as follows (Protocol of the 36th Session of The Joint Norwegian–Russian Fishery Commission, 10 October 2007):

- *TAC for the next year will be set at level corresponding to F_{pa}.*
- *The TAC should not be changed by more than +/- 25% compared with the previous year TAC.*

If the spawning stock falls below B_{pa}, the procedure for establishing TAC should be based on a fishing mortality that is linearly reduced from F_{pa} at B_{pa} to F= 0 at SSB equal to zero. At SSB-levels below B_{pa} in any of the

operational years (current year and a year ahead) there should be no limitations on the year-to-year variations in TAC.

ICES evaluated the modified management plan and conclude that it is in agreement with the precautionary approach.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	Not defined	
Precautionary Approach	B_{lim}	50 kt	Poor recruitment has resulted from SSBs lower than 50 kt; moderate or large year-classes have been produced at higher SSBs.
	B_{pa}	80 kt	B_{lim}*1.67
	F_{lim}	0.49	Median value of F_{loss}
	F_{pa}	0.35	F_{med}

STOCK STATUS:

F (Fishing Mortality)	2007	2008	2009
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	o	o	+

SSB (Spawning Stock Biomass)	2008	2009	2010
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	+	+	+

The SSB has been above B_{pa} since 1989, has been increasing in recent years and is at present at historic highest value. Fishing mortality has been around F_{pa} since the mid 1990s. Recruitment at age 3 has been at or above average since 2000. The year classes 2004-2006 are estimated to be very strong. Surveys indicate that the year classes 2007 - 2008 are below average and 2009 year class is around average.

RECENT MANAGEMENT ADVICE:

Cautiously avoid impaired recruitment and achieve other objective(s) of the existing management plan (e.g., catch stability) suggests that catches should be less than 303 kt.

MSY approach

For haddock, MSY information can be derived from simulations done during the evaluation of whether the HCR for these stocks are precautionary (see AFWG 2006). Also the biological model should be re-visited before any MSY reference points for advisory use are calculated. Work is in progress to evaluate the current management plan in relation to the MSY framework.

PA approach

The fishing mortality in 2011 should be no more than Fpa corresponding to landings of less than 333 kt in 2011. This is expected to keep SSB above B_{pa} in 2012.

Management plan

Following the agreed client management plan implies a TAC of 303 kt in 2011, which corresponds to a TAC increase of 25%. This is expected to keep SSB above B_{pa} in 2012.

STECF COMMENTS:

STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Haddock (*Melanogrammus aeglefinus*) in subareas I and II (Northeast Arctic haddock) falls under Category 4. STECF notes that in accordance with the agreed management plan, landings in 2011 should be 303,000 t.

STECF agrees with ICES that application of the agreed management plan in 2011 has long-term benefits above the application of F_{pa}.

Under-reporting of landings has been an important issue for this stock in recent years, fluctuating between 4% to 34% of the international reported landings. Non-reported landings (IUU) for the period 2002-2008 were estimated ranging from 6 kt to 40 kt, but the IUU estimate is 0 for 2009. Unreported landings will reduce the effect of management measures and will undermine the intended objectives of the harvest control rule. It is therefore important that management agencies ensure that all catches are counted against the TAC.

9.5. Saithe (*Pollacius virens*) in the North East Arctic (Sub-areas I and II)

FISHERIES: Since the early 1960s, the fishery has been dominated by purse seine and trawl fisheries, with a traditional gill net fishery for spawning saithe as the third major component. The purse-seine fishery is conducted in coastal areas and fjords. Historically, purse-seiners and trawlers have taken, approximately, equal shares of the catches. Regulation changes led to a reduction in the amounts being taken by purse-seiners after 1990.

Norway accounts for more than 90% of the landings. Over the last ten years about 40% of the Norwegian catch originates from bottom trawl, 25% from purse seine, 20% from gill net and 15% from other conventional gears (long line, Danish sine and hand line). The gill net fishery is most intense during winter, purse seine in the summer months while the trawl fishery takes place more evenly all year around.

Landings of saithe were highest in 1970-1976 with an average of 238,000 t and a maximum of 265,000 t in 1970. This period was followed by a sharp decline to a level of about 160,000 t in the years 1978 - 1984. Another decline followed and from 1985 to 1991, the landings ranged from 70,000 - 122,000 t. An increasing trend was seen after 1990 to 171,498 t in 1996. Since then the annual landings have fluctuated between 136,000 and 212,480 t. with the highest figure in 2006. Landings in 2007, 2008 and 2009 were 197,000 t, 183,000 t and 161,000 t respectively.

SOURCE OF MANAGEMENT ADVICE: This stock is currently managed by a joint Norwegian and Russian scientific advisory body. The fisheries are regulated according to bilateral agreements between Russia and Norway.

MANAGEMENT AGREEMENT: The Norwegian Ministry of Fisheries and Coastal Affairs implemented a harvest control rule (HCR) in autumn 2007 .The harvest control rule contains the following elements:

- *estimate the average TAC level for the coming 3 years based on F_{pa}, TAC for the next year will be set to this level as a starting value for the 3-year period.*
- *the year after, the TAC calculation for the next 3 years is repeated based on the updated information about the stock development, however the TAC should not be changed by more than +/- 15% compared with the previous year's TAC.*
- *if the spawning stock biomass (SSB) in the beginning of the year for which the quota is set (first year of prediction), is below B_{pa}, the procedure for establishing TAC should be based on a fishing mortality that is linearly reduced from F_{pa} at SSB=B_{pa} to 0 at SSB equal to zero. At SSB-levels below B_{pa} in any of the operational years (current year and 3 years of prediction) there should be no limitations on the year-to-year variations in TAC.*

The HCR has the objectives of maintaining high long-term yield, year-to-year stability, and full utilization of all available information on the stock dynamics. The plan aims to maintain target F at F_{pa} = 0.35 and minimize between-year TAC change to +/− 15%, unless SSB falls below B_{pa} in which case the management targets should change.

ICES has evaluated the Harvest Control Rule (HCR) and concluded that it is consistent with the precautionary approach under the conditions that the assessment uncertainty and error are not greater than those calculated from historic data. This also holds true when an implementation error (difference between TAC and catch) equal

to the historic level of 3 % is included. The proposed management plan is in accordance with the precautionary approach and ICES therefore advises according to this plan.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	not defined	
	F_{msy}	not defined	
Precautionary Approach	B_{lim}	136 000 t	B_{lim} * exp(1.645*σ), where σ=0.3 copy last year's report
	B_{pa}	220 000 t	F corresponding to an equilibrium stock = B_{lim}
	F_{lim}	0.58	F_{lim} * exp(-1.645*σ), where σ=0.3. This value is considered to have a 95% probability of avoiding the F_{lim}
	F_{pa}	0.35	0.35 in agreed management plan

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	+	+	+

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	+	+	+

Since 1995, SSB has been well above B_{pa} and has decreased in recent years. Fishing mortality has been well below F_{pa} since 1996. The 2002 year class was the highest in the time-series, the 2003 and 2004 were among the lowest, while the 2005 year class is estimated to be around average.

RECENT MANAGEMENT ADVICE:

Cautiously avoid impaired recruitment and achieve other objective(s) of a management plan (e.g., catch stability) ICES advises that landings should be less than 173 kt. The basis for the advice is the Norwegian Management Plan (HCR).

MSY approach

For saithe, MSY information can be derived from simulations done during the evaluation of whether the HCR for these stocks are precautionary (see AFWG 2007). The highest long-term yield was then obtained for an exploitation level of 0.32, i.e. a little below F_{pa}, and ICES then recommended using a lower value than F_{pa} in the HCR.However the basis for the simulations needs to be revised according to the revision of the time series for this stock, before any MSY reference points for advisory use are calculated. Work is in progress to evaluate the current management plan in relation to the MSY framework.

PA approach

The fishing mortality in 2011 should be no more than F_{pa} corresponding to landings of less than 191 kt in 2011. This is expected to keep SSB above B_{pa} in 2012.

Management plan

Following the agreed client management plan implies a TAC of 173 000 t in 2011. The SSB is expected to decrease by 9% in 2011 and to remain above B_{pa} at the beginning of 2012.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Saithe (*Pollacius virens*) in subareas I and II (Northeast Arctic saithe) falls under Category 4. STECF notes that in accordance with the agreed management plan, landings in 2011 should be 173,000 t.

9.6. Redfish (*Sebastes mentella*) in Sub-areas I and II

FISHERIES: Traditionally, the directed fishery has been conducted by Russia and other East-European countries in the areas from south of Bear Island to Spitsbergen. From the mid-1970s to the mid-1980s, large catches were taken. In the mid-1980s, Norwegian trawlers started fishing along the continental slope (around 500-m depth) further south, in areas never harvested before, and inhabited primarily by mature fish. After a sharp decrease in the landings from the traditional area until 1987, this fishery on new grounds resulted in a temporary increase in the landings until 1991, after which the landings declined. Since 1991, the fishery has been dominated by Norway and Russia.

Since 1 January 2003, all directed trawl fisheries for *S. mentella* have been forbidden in the Norwegian EEZ north of 62°N and in the Svalbard area. Additional protection for adult *S. mentella* comprises area closures. Outside permanently closed areas it is, however, legal to have up to 20% redfish (*S. mentella* and *S. marinus* combined) in round weight as by-catch per haul and on-board at any time when fishing for other species. Since 1 January 2005, the by-catch percentage has been reduced to 15% (both species combined).

A directed pelagic fishery for S. mentella in international waters of the Norwegian Sea outside EEZ has developed since 2004. Landings of *S. mentella* taken in the pelagic fishery for blue whiting and herring in the Norwegian Sea have been reported in 2004 and 2005. In 2006, this fishery developed further to become a directed fishery with 13 countries and more than 40 trawlers landed around 28,000 t. Catches in 2007 and 2008 have decreased significantly (16,000 and 9,000 t, respectively) due to TACs set by NEAFC and decreased economic value of redfish. Total catches in 2009 are not available.

This fishery is managed by the North-East Atlantic Fisheries Commission, and during its 28th annual meeting in November 2009 the Commission adopted by consensus a TAC for 2010 of 8 600 t.

Other catches of *S. mentella*, are taken as by-catches in other fisheries. By-catches are taken in the demersal cod/haddock/Greenland halibut fisheries, as juveniles in the shrimp trawl fisheries, and occasionally in the pelagic blue whiting and herring fisheries in the Norwegian Sea.

MANAGEMENT AGREEMENTS: The *S. mentella* occurrences inside the Norwegian and Russian EEZs are currently managed by a joint Norwegian and Russian scientific advisory body. The fisheries are regulated according to bilateral agreements between Russia and Norway. NEAFC has set a TAC for the *S. mentella* in international waters in the Norwegian Sea in 2007 (15,500 t) and 2008 (14,500 t). The 2009 TAC is 10,500 t. No specific management objectives are so far implemented.

SOURCE OF MANAGEMENT ADVICE: The advisory body is ICES. ICES notes that it was not possible to conduct an analytical assessment of this stock. Information, therefore, is based on Norwegian and Russian research vessel surveys carried out since 1980. These surveys provide information on both recruitment and spawning stock biomass. The management body of the pelagic redfish fishery is NEAFC. Data from national Norwegian and Russian experimental surveys on pelagic redfish in the Norwegian Sea in 2007 are available. In 2008, the first international survey was carried out.

REFERENCE POINTS: No reference points have been proposed for this stock.

STOCK STATUS:

	F (Fishing Mortality)		
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	?	?	?

	SSB (Spawning Stock Biomass)		
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?

Precautionary approach (B_{pa},B_{lim})	?	?	?

Due to recruitment failure in the year classes 1996-2005, ICES considers it necessary to protect the spawning biomass since very few new mature individuals will enter the stock for at least the next 12-15 years.

An 0-group survey indicates improved recruitment of 0-group from 2007 to 2010, but also indicates lower values of the 2008 year class.

No reliable analytical assessment can be presented for this stock.

The state of the pelagic occurrences of *S. mentella* is unknown.

RECENT MANAGEMENT ADVICE:

The 2009 data (landings and survey) do not change the perception of the stock in the Barents Sea and Svalbard area. Therefore, the advice for this fishery in 2011 is the same as the advice given in 2009 for the 2010 fishery.

ICES advises that: "*there should be no directed trawl fishery on Sebastes mentella in Subareas I and II in 2011. Area closures should be maintained and by-catch limits should be as low as possible until a significant increase in the spawning-stock biomass (and a subsequent increase in the number of juveniles) has been verified.*"

MSY approach

Given the biological vulnerability of the stock, ICES advice is presented under the precautionary approach. Therefore no option within the MSY framework is presented by ICES.

PA approach

The 2009 data (landings and survey) do not change the perception of the stock in the Barents Sea and Svalbard area. Therefore, the advice for this fishery in 2011 is the same as the advice given in 2009 for the 2010 fishery.

STECF COMMENTS:

STECF agrees with the ICES assessment that the state of the stock is unknown.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Redfish (*Sebastes mentella*) in Sub-areas I and falls under Category 10. Accordingly STECF notes that the rules for the above category imply a TAC reduction of at least 25% in 2011 compared to 2010. Recovery measures should be implemented including effort reductions and introduction of more selective fishing gear.

STECF notes however that there is no separate TAC set for demersal S. Mentella in Sub-areas I and II.

9.7. Redfish (*Sebastes marinus*) in Sub-areas I and II

FISHERIES: The fishery is mainly conducted by Norway, accounting for 80-90% of the historical total catch. The fish are caught mainly by bottom otter trawl (at present only as by-catch) and gillnet, and to a lesser extent by longline, Danish seine, and handline, in that order. Some of the catches are taken in mixed fisheries together with saithe and cod. Important fishing grounds are the Møre area (Svinøy), Halten Bank, outside Lofoten and Vesterålen, and at Sleppen outside Finnmark. Traditionally, *S. marinus* has been the most popular and highest priced redfish species. In the period 1984-90, landings of *S. marinus* were at a level of 23,000–30,000 t. In the period 1991-1999, the landings were around 17,000 t but since then have decreased, and from 2004 to 2007, annual landings were estimated to be about 7,000 t. The 2008 landings were 6,300 t. EU landings reached 388 t in 2007 and about 227 t in 2008. Landings in 2009 are estimated to have been about 6,000 t.

Since 1 January 2003, all directed trawl fisheries for *S. marinus* have been forbidden in the Norwegian EEZ north of 62°N and in the Svalbard area. A minimum legal landing size of 32 cm has been set for all Norwegian fisheries and international fisheries in the Norwegian EEZ, with an allowance to have up to 10% undersized (i.e., less than 32 cm) specimens of *S. marinus* (in numbers) per haul. From January 2006, it is forbidden to use gillnets with mesh size less than 120 mm when fishing for redfish. The closed seasons enforced since 2004 seem to have reduced the gillnet catches by about 2,500 t, while the catches taken by other gears have not decreased, and in some cases increased, causing the total international catches to remain at the same level during the last 6 years.

SOURCE OF MANAGEMENT ADVICE: No explicit management objectives have been established for this stock. Information is based on Norwegian and Russian research vessel surveys carried out since 1986 as well as from CPUE (kg per trawl hour) from Norwegian trawlers since 1992. An exploratory assessment was conducted using a simulation model covering the period 19862006. Input data included catches and the annual Barents Sea joint bottom trawl survey. Work on that model is continuing.

MANAGEMENT AGREEMENTS: The stock is currently managed by a joint Norwegian and Russian scientific advisory body and regulated according to bilateral agreements between Russia and Norway.

REFERENCE POINTS: No reference points have been established for this stock

STOCK STATUS: The 2009 data (landings and survey) do not change the perception of the stock. In the absence of defined reference points, the state of the stock cannot be fully evaluated. Surveys and commercial CPUE show a substantial reduction in abundance and indicate that the stock at present is historically low. Information on year-class strength indicates record-low levels for the last decade. Therefore, this stock is presently in very poor condition. Given the low productivity of this species, this situation is expected to remain for a considerable period.

RECENT MANAGEMENT ADVICE: The 2009 data (landings and survey) do not change the perception of the stock. Therefore, the advice for this fishery in 2011 is the same as the advice given in 2007 for the 2008 fishery and re-iterated since then: *"There should be no directed fishery on Sebastes marinus in Subareas I and II in 2011. Area closures should be maintained and by-catch limits should be as low as possible until a significant increase in the spawning-stock biomass (and a subsequent increase in the number of juveniles) has been verified"*.

STECF COMMENTS: STECF agrees with the ICES assessment that the state of the stock is unknown.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Redfish (*Sebastes marinus)* in Sub-areas I and falls under Category 10. Accordingly STECF notes that the rules for the above category imply a TAC reduction of at least 25% in 2011 compared to 2010. Recovery measures should be implemented including effort reductions and introduction of more selective fishing gear.

STECF notes however that there is no TAC set for S. marinus in Sub-areas I and II.

9.8. Greenland halibut (*Reinhartius hippoglossoides*) in area I and II

FISHERIES: The regulations enforced in 1992 reduced the total landings of Greenland halibut by trawlers from about 20,000 to 8,600 t. Since then annual trawler landings have varied between 9,000 and 20,000 t without any clear trend attributable to changes in allowable by-catch. In 2008 and 2009, the landings were estimated to amount to 14,000 t and 12,000 t respectively.

Since 1992, the fisheries have been regulated by allowing a directed fishery only by small coastal longline and gillnet vessels. By-catches of Greenland halibut in the trawl fisheries have been limited by permissible by-catch per haul and an allowable by-catch retention limit on board the vessel. The 38th Session of the Joint Norwegian-Russian Fisheries Commission in 2009 decided to cancel the ban against targeted Greenland halibut fishery and established a TAC at 15 000 t for next three years (2010-2012). The TAC was allocated between Norway, Russia and other countries with shares of 51, 45 and 4% respectively.

In recent years, EU Member State catches have been between 300 t and 500 t.

SOURCE OF MANAGEMENT ADVICE: This stock is currently managed by a joint Norwegian and Russian scientific advisory body. The fisheries are regulated according to bilateral agreements between Russia and Norway. ICES has been approached for advice on biological assessment and management of this stock. An exploratory assessment was based on commercial catch-at-age data, two survey series, and one commercial cpue series. The assessment is uncertain due to age-reading problems and lack of contrast in the data.

REFERENCE POINTS: No reference points are defined for this stock.

STOCK STATUS: The 2009 data (landings, survey and cpue) available for this stock do not change the perception of the stock In the absence of defined reference points the status of the stock cannot be fully evaluated. The tentative assessment (undertaken in 2007) indicates that SSB has been low since the late 1980s, but a slight increase is indicated until 2004. After 2004 the SSB has decreased again. There are indications of a

decreasing trend in fishing mortality since the 1990s. Recruitment has been stable at a low level since the 1980s. Recent recruitment estimates are very uncertain.

RECENT MANAGEMENT ADVICE:
The 2009 data (landings, survey and cpue) available for this stock do not change the perception of the stock and give no reason to change the advice from that given in 2009.

The advice for the fishery in 2011 is the same as the advice given in 2009 for the 2010 fishery: *"The stock has remained at a relatively low size in the last 25 years at catch levels of 15 000–25 000 t. In order to increase the SSB, catches should be kept well below that range. Catches should be below 13 000 t as advised since 2003; this is the level below which SSB has increased in the past"*.

Additionally, ICES notes that the evaluation of this stock is uncertain due to age-reading problems and lack of contrast in the data. The age-reading issue is being addressed and should be resolved in the not too distant future. Corrections to the whole time-series are required.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Redfish (*Sebastes marinus)* in Sub-areas I and falls under Category 6. Accordingly STECF notes that the rules for the above category imply a TAC reduction of up 15% in 2011 compared to 2010.

STECF notes however that in 2009 the 38th Session of the Joint Norwegian-Russian Fisheries Commission established a TAC at 15 000 t for the years 2010-2012.

9.9. Capelin *(Mallotus villosus*) in ICES subareas I and II, excluding Division IIa-west of 5°W (Barents Sea capelin)

The stock summary and advice for Capelin (*Mallotus villosus*) in Subareas I and II and Division IIa west of 5°W (Barents Sea) will be updated in October 2010 and included in the consolidated STECF review of advice for 2011 for Stocks of Community interest. The most recent STECF advice on this stock is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

9.10. Herring (*Clupea harengus*) in ICES subareas I & II (Norwegian Spring spawners)

The stock summary and advice for herring in Subareas I and II will be updated in October 2010 and included in the consolidated STECF review of advice for 2011 for Stocks of Community interest. The most recent STECF advice on this stock is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

10. Resources in the Faeroe plateau ecosystem

10.1. Cod (*Gadus morhua*) in Vb1 (Faroe Plateau cod)

FISHERIES: Cod are mainly taken in a directed cod and haddock fishery with long lines, in a directed jigging fishery and as by-catch in the trawl fishery for saithe. Following the declaration of EEZs in the 1970s, the fishery became largely Faroese and fishing mortality declined briefly but it has increased since to former high levels. Landings have fluctuated between 6,000 and 40,000 t (1986-2007), almost entirely taken by non-EU fleets. In 2007 landings were 8,100 t, the lowest observed since 1993.t. Landings in 2008 and 2009 were 10,500 t and 10,000 t respectively. The EU fishery on this stock has been managed together with cod in VI, Vb (EC waters), International waters of XII and XIV.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES. The advice is based on an analytical method using survey and catch-at-age data. The technique was XSA calibrated by two research surveys.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	NA	
	F_{msy}	NA	
Precautionary Approach	B_{lim}	21 000 t	Lowest observed SSB (1998)
	B_{pa}	40 000 t	$B_{lim}e^{1.645\sigma}$, assuming a σ of about 0.40 to account for the relatively large uncertainties in the assessment.
	F_{lim}	0.68	$F_{pa}e^{1.645\sigma}$, assuming a σ of about 0.40 to account for the relatively large uncertainties in the assessment.
	F_{pa}	0.35	Close to F_{max} (0.34) and F_{med} (0.38) values from the 1998 assessment.

STOCK STATUS:

F (Fishing Mortality)			
	2007	2008	**2009**
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	o	o	o

SSB (Spawning Stock Biomass)			
	2008	2009	**2010**
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	o	o	o

SSB is increasing again after having been at the lowest observed level in 2007 and is now estimated between B_{lim} and B_{pa}. Fishing mortality has decreased since 2002 and is now between F_{lim} and F_{pa}. The average recruitment since 2001 has been around one third of the long-term average. The 2008 year class is indicative to be above average.

MANAGEMENT OBJECTIVES: The management objective is to achieve sustainable fisheries. An effort management system was implemented in the Faroese demersal fisheries in Division Vb in 1996. From the outset the aim of the effort management system was to harvest on average 33% in numbers of the exploitable stock of cod. This translates into an average F of approximately 0.45, above the F_{pa} of 0.35. ICES considers this to be inconsistent with the precautionary approach.

RECENT MANAGEMENT ADVICE:

Cautiously avoid impaired recruitment (**Precautionary Approach**) by reducing fishing mortality by 24% from current level to less than F_{pa} (0.35).

MSY approach

Preliminary simulation studies taking into account the productivity (cyclic) of the ecosystem were performed, but these simulations have to be elaborated further before it will be possible to propose reliable candidates for F_{msy}.

PA approach

The fishing mortality should be kept below F_{pa} of 0.35. This translates into a reduction in fishing mortality by 24% as compared to the average of last 3 years (0.46).

Management plan

The Management plan of F=0.45 will in the short term lead to SSB>B_{pa} but SSB will not with high probability remain above B_{pa}.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Cod (*Gadus morhua*) in Vb1 (Faroe Plateau cod) falls under Category 3. Accordingly, and adopting $F_{0.1}$ (F=0.11) as the appropriate proxy for F_{msy}, STECF notes that the rules for the above category imply a TAC in 2011 of about 15,000 t corresponding to a 30% reduction in fishing mortality in 2011 compared to 2010.

STECF notes that this stock is managed by an effort management system and that no TAC is set. STECF also notes that the forecast catch for 2011 according to the Faroese management plan is 20,000 t. The forecast catch according to ICES advice is 16,000 t.

10.2. Cod (*Gadus morhua*) in Vb2 (Faroe Bank cod)

FISHERIES: during the recent 10 years total catches for this stock have fluctuated between 4000 and 200 t. In the latest years EU landings have constituted 10-20% of the total. The EU fishery on this stock has been managed together with cod in VI, Vb (EC waters), International waters of XII and XIV. Faroe Bank has been closed to fishing since 1 January 2009.

SOURCE OF MANAGEMENT ADVICE: The main management advisory body is ICES.

MANAGEMENT OBJECTIVES: There are no explicit management objectives for this stock

REFERENCE POINTS: No reference points have not been defined for this stock.

STOCK STATUS: There is no analytical assessment for this stock. Survey indices indicate that the stock is severely depleted. Catches have declined strongly in the last three years despite a marked increase in the exploitation rate.

RECENT MANAGEMENT ADVICE: 2009 data on landings and indices from two surveys for this stock do not change the perception of the stock and do not give reason to change the advice from 2008. The advice for the fishery in 2011 is therefore the same as the advice given in 2008 for the 2009 fishery: "*Because of the very low stock size ICES advises that the fishery should be closed. Reopening the fishery should not be considered until both survey indices indicate a biomass at or above the average of the period 1996–2002*"

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advice for 2011.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that Cod (*Gadus morhua*) in Vb2 (Faroe Bank cod) falls under Category 10. Accordingly STECF notes that the rules for the above category imply that the TAC should be reduced by at least 25% in 2011 compared to 2010, recovery measures should be implemented including effort reductions and introduction of more selective fishing gears. STECF further notes that no TAC is set for this stock and that Faroe Bank has been closed to fishing since 1 January 2009.

10.3. Haddock (*Melanogrammus aeglefinus*) in area Vb (Faroe)

FISHERIES: Faroe haddock are taken as part of a mixed demersal fishery, with most taken by trawls or longlines. Landings are predominantly Faroese, with only low EU landings. Since 1988 total landings from Vb have increased from 4,000 t to 27,000 t in 2003 but have dropped to 7,582t in 2008. Total catch in 2009 was 5 kt (longliners accounted for 62% , trawlers for 38%). The management is by effort restrictions through individual transferable days introduced in 1996. The fishing law also prescribes fleet specific catch compositions of cod, haddock, saithe, and redfish.

Haddock are mainly caught in a directed long line fishery for cod and haddock and as by-catchs in trawl fisheries for saithe. Normally, long line accounts for 80-90% of the catches. This changed in 2009 primarily due to that only a fraction of the allocated number of fishing days to the longliners was actually used. The same feature seems to occur in the present fishing year (2009/2010).

SOURCE OF MANAGEMENT ADVICE: The management advisory body is ICES. The advice is based on an age-based assessment using commercial landings and age disaggregated data from two surveys.

MANAGEMENT OBJECTIVES: The effort management system implemented in the Faroese demersal fisheries in Division Vb since 1996 aims at harvesting on average 33% of the haddock exploitable stock in

numbers. This translates into an average F of 0.45, above the F_{pa} of 0.25. ICES considers this to be inconsistent with the precautionary approach.

Under the effort management system, fishing days are allocated to all fleets fishing in shallow waters (< 380 m depth) for the period 1 September–31 August. In addition, the majority of the shallow areas (< ca. 200 m) are closed for trawling. and are mainly utilized by longliners. Some fleets (deep-sea trawlers and gillnetters) are presently not under the fishing days regime but it is expected that within a few years all fleets are included.

REFERENCE POINTS:

	Type	*Value*	*Technical basis*
MSY Approach	MSY $B_{trigger}$	Not defined	
	F_{msy}	Not defined	
Precautionary Approach	B_{lim}	22 000 t	Lowest observed SSB
	B_{pa}	35 000 t	$B_{lim}e^{1.645\sigma}$, assuming a σ of about 0.3 to account for the uncertainties in the assessment.
	F_{lim}	0.40	2 × std. dev. above F_{pa}
	F_{pa}	0.25	F_{med} (1998) = 0.25.

STOCK STATUS:

F (Fishing Mortality)	2007	2008	2009
MSY (F_{msy})	?	?	?
Precautionary approach (F_{pa},F_{lim})	o	−	o

SSB (Spawning Stock Biomass)	2008	2009	2010
MSY ($B_{trigger}$)	?	?	?
Precautionary approach (B_{pa},B_{lim})	+	o	o

SSB has decreased since 2003 and is now below B_{lim}. The fishing mortality has ~~increased~~ decreased from above F_{lim} in 2003 to around F_{pa} in 2009. Year classes from 2001 have been well below average but the survey estimate indicates that the 2009 year-class is higher but still below the long term average.

RECENT MANAGEMENT ADVICE:

Cautiously avoid impaired recruitment (**Precautionary Approach**) suggest that the fishing mortality and hence the catch in 2011 should be as low as possible.

MSY approach

Simulation studies taking into account the productivity (cyclic) of the ecosystem are necessary to come up with reliable candidates for F_{msy}.

PA approach

Given the recent poor recruitment and slow growth and the rapidly declining SSB. the forecast indicates that even a zero fishing mortality in 2011 will not result in getting the stock above B_{pa} in 2012 and there should be no directed fishery on haddock. Measures should be put in place to minimise bycatches of haddock in other fisheries. A recovery plan should be developed and implemented as a prerequisite to reopening the directed fishery.

STECF COMMENTS: STECF agrees with the ICES assessment of the state of the stock and the advised forecast catch options for 2011.Furthermore, if the objective of management is to allow the stock to recover to B_{pa} in the shortest possible time, STECF agrees with the ICES advice that there should be no directed fishery on haddock. Measures should be put in place to minimise bycatches of haddock in other fisheries. A recovery plan should be developed and implemented as a prerequisite to reopening the directed fishery.

With reference to the Communication from the Commission (COM (2010) 241 FINAL), STECF advises that haddock (*Melanogrammus aeglefinus*) in Vb1 (Faroe Plateau) falls under Category 10. Accordingly STECF notes that the rules for the above category imply that the TAC should be reduced by at least 25% in 2011 compared to 2010, recovery measures should be implemented including effort reductions and introduction of more selective fishing gears. STECF further notes that no TAC is set for this stock. STECF notes that at the Extracts of Council and Commission statements in 2009 concerning haddock in EC waters of in EC waters of zone Vb states: "T*he Council and the Commission agree that until such a plan is adopted, it would be appropriate to set the TAC for this stock according to the same rule that applies to the stock of haddock in the North Sea, using the precautionary spawning biomass and the limit spawning biomass appropriate for this stock, and limiting inter-annual TAC variations to no more than 25%."*

STECF therefore advises that this implies that the TAC for 2011 for haddock in Vb1 (Faroe Plateau) should be set at a level corresponding to a 25% reduction in the TAC for 2010. STECF is unable to advise on the appropriate value for division Vb1 alone as the TAC for haddock in Vb is combined with that for VIa.

10.4. Saithe (*Pollachius virens*) in Division Vb (Faroe saithe).

Advice for this stock is given in Section 2.6.

11. Resources in the Black Sea

11.1. Turbot (*Psetta maximus*) in Black Sea

The stock summary and advice for turbot in the Black Sea will be updated in October 2010 and included in the consolidated STECF review of advice for 2011 for Stocks of Community interest. The most recent STECF advice on this stock is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

11.2. Sprat (*Sprattus sprattus*) in Black Sea

The stock summary and advice for sprat in the Black Sea will be updated in October 2010 and included in the consolidated STECF review of advice for 2011 for Stocks of Community interest. The most recent STECF advice on this stock is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

11.3. Other Black Sea stocks (anchovy, mackerel, bonito, whiting and red mullet)

The stock summary and advice for other stocks in the Black Sea will be updated in October 2010 and included in the consolidated STECF review of advice for 2011 for Stocks of Community interest. The most recent STECF advice on this stock is given in the Consolidated review of advice for stocks of Community interest for 2010 (STECF, 2009, EUR 24122 EN).

12. List of Acronyms

ACOM	The Advisiory Committee of ICES
ACFM	The Advisory Committee on Fishery Management of ICES
ASPM	Age structured population model
BRP	Biological Reference Points
CCAMLR	Committee for the Conservation of Antarctic Marine Living resources
CCSBT	Commission for the Conservation of Southern Bluefin Tuna
CECAF	Committee for Eastern Central Atlantic Fisheries
CPFD	Catch per fishing day
CPS	Commission du Pacifique Sud
CPUE	Catch per unit effort

CTMFM	Comisión Técnica Mixta del Frente Marítimo
DEPM	Daily egg production method
DFO	Department of Fisheries and Oceans
EIAA	Economic Interpretation of the ACFM Advice
EIFAC	European Inland Fishery Advisory Committee
EEZ	Exclusive economic zone
EPO	Eastern Pacific Ocean
F	Fishing mortality
FAO	Fisheries and Agriculture Organization
FAD	Fishing Attracting Device
FARWEST	Fisheries Assessment Research in Western Mediterranean
FIGIS	Fisheries Geographical Information System
FICZ	Falkland Island Inner Conservation Zone
FIFD	Falkland Islands Fisheries Department
FOCZ	Falkland Island Outer Conservation Zone
FRCC	Fisheries Resources Conservation Committee
FU	Functional Units
GFCM	General Fisheries Commission for the Mediterranean
GRUND	GRUppo Nazionale Demersali (Italy)
IATTC	Inter American Tropical Tuna Commission
IBSFC	International Baltic Sea Fisheries Commission
ICA	Integrated catch at age analysis
ICCAT	International Commission for Conservation of Atlantic Tuna
ICES	International Council for the Exploration of the Sea
ICS	International Scientific Committee for Tuna and Tuna-like species in the North Pacific Ocean
IFREMER	Institut Français de Recherche pour l'Exploitation de la Mer
IEO	Instituto Español de Oceanografía
INIDEP	Instituto Nacional de Investigación y Desarrollo Pesquero
IOTC	Indian Ocean Tuna Commission
IUU	Illegal, Unregulated and Unreported
LCA	Length-based cohort analysis
LLUCET	Project to study the recruitment and juveniles of hake
LPUE	Landings per unit effort
MBAL	Minimum biologically acceptable level
MEDITS	International Bottom Trawl Surveys in the Mediterranean
MEDLAND	Mediterranean Landings
MSY	Maximum sustainable yield
MSVPA	Multi Species VPA
NAFO	Northwest Atlantic Fisheries Organisation
NEA	North East Atlantic
NEI	Not Elsewhere Included
NEMED	*Nephrops* in Mediterranean Sea
NRIFSF	National Research Institute for Far Seas Fisheries - Japan
PA	Precautionary Approach
PICTs	Pacific Islands Countries and Territories
PO	Pacific Ocean
RRAG	Renewable Resources Assessment Group
SAC	Scientific Advisory Committee (GFCM)
SAFC	South Atlantic Fisheries Commission
SAGP&A	Secretaria de Agricultura, Ganadería, Pesca y Alimentos (Argentine)
SCRS	ICCAT Standing Committee on Research and Statistics
SCSA	Sub-Committee on Stock Assessment (GFCM)
SCTB	Standing Committee on Tuna and Billfish (western and central Pacific Ocean)
SGRST STECF	Subgroup on Resource Status
SPC	Southern Pacific Commission
SSB	Spawning stock biomass
SSB/R	Spawning stock biomass per recruit

STECF	Scientific, Technical and Economic Committee for Fisheries
TAC	Total Allowable Catch
WCPO	Western Central Pacific Organisation
WCPFC	Western Central Pacific Fishery Organisation
WECAF	Committee for Western Central Atlantic Fisheries
WGEF	Working Group on Elasmobranches Fishes
WIO	Western Indian Ocean
WP	IOTC Working Parties
WPB	IOTC Working Parties on Billfish
WPTT	IOTC Working Parties on Tropical Tunas
WPO	Western Pacific Ocean
XSA	Extended survivors analysis
Y/R	Yield per recruit

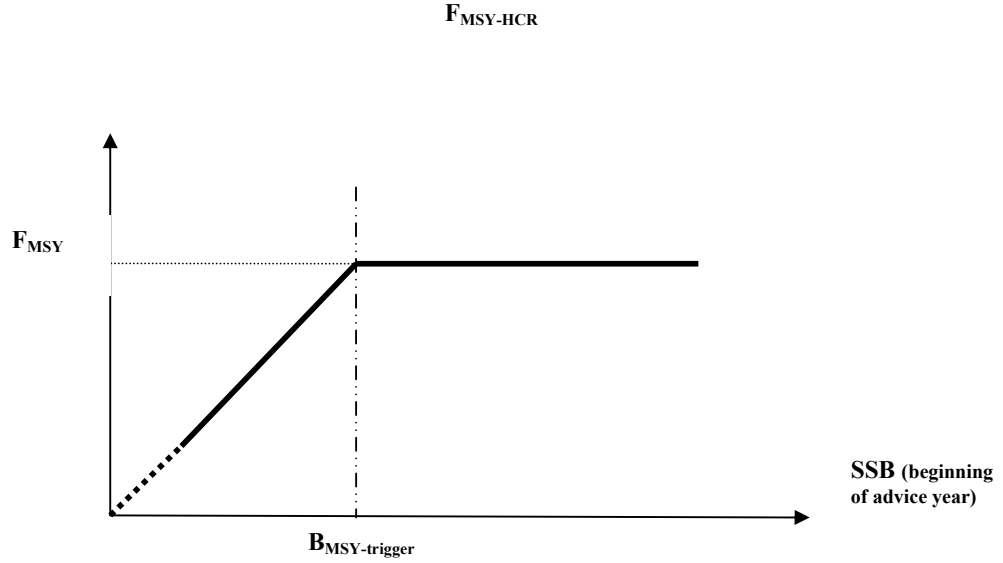
13. Annex I. Basis for ICES MSY advice.

Until 2009, ICES' advice was based on the precautionary approach, extendend by long-term considerations for maximising yield and considering ecosystem effects of the fishery. In 2010, ICES has started a more formal approach for the implementation of the maximum sustainable yield-concept in its advice. This follows the requests of clients, inter alia the EU Commission asking for a full implementation no later than 2015 (COM (2006) 360 final).

Maximum sustainable yield is a broad conceptual objective aimed at achieving the highest yield possible over the long term (an infinitely long period of time). It is non-specific with respect to: (a) the biological unit to which it is applied; (b) the models used to provide scientific advice; and (c) the management methods used to achieve MSY. The MSY concept can be applied to an entire ecosystem, an entire fish community, or a single fish stock. The choice of the biological unit to which the MSY concept is applied influences both the sustainable yield that can be achieved and the associated management options. Mostly for practical reasons, implementation of the MSY concept by ICES will first be applied to individual fish stocks. The models (mathematical and conceptual) used to estimate MSY and associated parameters typically assume that all of the factors not explicitly included in the models remain constant. Thus, MSY estimates are almost always conditional estimates based on current conditions and assumptions.

For long lived stocks with population size estimates, ICES bases its MSY approach on attaining a fishing mortality rate at or below F_{MSY}. In this approach, both fishing mortality and biomass reference points are used; these reference points are F_{MSY} and $B_{MSY\text{-}trigger}$. The approach does not use a B_{MSY} estimate. B_{MSY} is a notional value around which stock size fluctuates when $F=F_{MSY}$. Recent stock size trends may not be informative about B_{MSY} either because F has exceed F_{MSY} for many years or because current ecosystem conditions are substantially different from those in the past.

$B_{MSY\text{-}trigger}$ is a biomass reference point that triggers a cautious response, The cautious response is to reduce fishing mortality to reinforce the tendency for a stock to rebuild and fluctuate around a notional value of B_{MSY} (even though the notional value is not specified in the framework) when $F \leq F_{MSY}$. The concept of $B_{MSY\text{-}trigger}$ evolves from the PA reference point B_{pa} which ICES has used as a basis for fisheries advice for more than a decade. B_{pa} is a biomass level above which there is low probability of impaired recruitment. The evolution in the determination of $B_{MSY\text{-}trigger}$ requires contemporary data with fishing at F_{MSY} to experience the normal range of fluctuations in biomass. The ICES MSY approach is specified in the Harvest Control Rule (HCR) depicted below:



Although the World Summit on Sustainable Development (2002) called for stocks to be restored to levels that can produce MSY by 2015 where possible (which requires that overfishing relative to MSY be ended well in advance of 2015; for many stocks it is already too late), this is not the policy of the European Commission (see COM (2006) 360 final). The EC and other management bodies that request advice from ICES have indicated they favour a gradual transition to implementing the MSY approach.

In the transition period, three catch options will be provided by ICES if the requisite information is available. The first option reflects a stepwise transition to the ICES MSY Harvest Control Rule by 2015. This transition will begin with advice for 2011 if an estimate or a proxy of F_{MSY} is available. Otherwise, it will begin with advice for 2012. The transition will be in equal steps from the year in which it begins. If the transition begins in 2011, there will be 5 steps (n=5). The catch options for 2011 for a transition beginning in 2011 will be:

$$F_{MSY\text{-}HCR\text{-}transition}(2011) = \text{Min}\{0.8 \bullet F(2010) + 0.2 \bullet F_{MSY\text{-}HCR}(2011); F_{pa}\}$$

where FMSY-HCR (2011) is according to the HCR in Figure 2, being equal to FMSY if SSB in 2011 is above BMSY-trigger and reduced linearly if SSB is below. The FMSY-HCR-transition (2011) values are capped at Fpa to maintain consistency with the precautionary approach. The plan for transition to MSY takes cognizance of the general understanding that managers want a gradual transition, although they have not formally agreed to such a plan.

14. Annex I Contact details of Participants of the STECF_SGRST 10-02 Working Group

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15. Annex II-Expert declarations

Declarations of invited experts are published on the STECF web site on https://stecf.jrc.ec.europa.eu/home together with the final report.

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Abstract

SGRST-10-02 was held on 5-9 July 2010 in Lyngby (Denmark). The meeting was the 2nd meeting convened in 2010 focussing on the review of stocks of Community interest. STECF reviewed the report during its plenary meeting on 12-16 July 2010.

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